The Journal of the
American Medical Association

VOL. XXVII. CHICAGO, ILL., OCTOBER 10, 1896. No. 15.

LECTURE.

MEDICAL EDUCATION.

Opening lecture delivered at Rush Medical College, Chicago, September 29, 1896.

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Ladies and Gentlemen: The wish expressed by my new colleagues that I open the lectures of this new year of medical instruction by some considerations of our work, laid upon me the somewhat difficult task of explaining my opinion, in a foreign language, on the organization of schools in this country, with which, also, I am not yet perfectly acquainted.

You must not think that this will be a confession of my ignorance of American history and institutions. On the contrary, I have always, from the time of my youth, inspired by the treatises of Ralph Waldo Emerson, loved this land. At the time of the great civil war I eagerly studied the work done by your fathers, who, destitute of everything necessary to carry on a successful war, decided to live or die for liberty and humanity.

I was astonished at this time to acknowledge the origin of a new war hygiene, later further developed in the great wars of the old country. Comparing the great losses in the Crimean war, which preceded the American civil war, with those of the Franco-German war of 1870, you will not fail to see the great progress in this new field, principally, as I think, effected by the distribution of the wounded and sick over vast areas, by means of the mighty streams.

It seems to me that the American people, impelled by urgent necessity, became more and more inventive, and learned more in a few years than it would have learned in centuries without that impulse.

The wonderful development in this land that you all know, from your own experience, now followed during the short period of twenty to thirty years. All facilities were enhanced by the confidence in the restored Union; enormous wealth and prosperity, such as were never known before in history, were arising from the soil of the new land.

Naturally, then came depression. In the restless strife for improvement many things, without which a people can not be happy, were not taken into account. I only mention the devastation of woods, threatening a change of clime, unless replanted systematically, an injury not otherwise to be remedied.

Political and financial influences have more and more increased the internal difficulties, so that now will come a time when the labor of the whole land will be required to sustain this prosperity.

But how will the people endure this change of conditions, the irreparable loss of so many facilities? I think that they will accept the new position, the harder strife for life, the conditions of life impaired and narrowed also by the competition of the whole world. This confidence is based in the first place, on historical facts. A people who have surmounted the hardships of a civil war will find a method also in this harder time, but in another way.

Not the pioneer and the digger, but the teacher and educator will be the leaders in the new course. Science will be the aim and purpose.

The educational question now moves the whole world. European civilization based wholly on the old classic traditions of Rome and Greece, has reached, especially in Germany, a standard in classic education which seems to be incompatible with the claims of modern life. Natural science will more and more supplant the ancient literature and the modern philologist finds that the modern languages have attained a higher certainty and clearness by which to express the modern thoughts than the dead languages now occupying nearly the whole time of the scholar.

The reform of higher school education now commencing in Germany, will save our country from imitating the so-called classic studies. Let us fill the mind of the child and the youth with a broad knowledge of earth and heaven, of living beings and dead material, of human life and thought, history and philosophy, so that they may understand the coming life and be able to distinguish the good and the evil, the just and the unjust; religion and morals must have a prominent part in this system of education. What I wish to say is this, that for the young man or woman willing to devote themselves to medical science, a non-classic education is quite sufficient. But the requirements of preliminary education necessary for admission to our colleges, seem to be totally insufficient. Unless certain literary colleges have been attended, an examination in writing, in the branches of a good English education, including algebra as far as equations of the second degree, the first book of geometry, English composition, elementary physics and the elements of the Latin language should be substituted; chemistry and physics will be taught in the freshman year.

I do not find in the program the descriptive natural sciences, the natural history of plants and animals, the geology and mineralogy, which contain the elements of so many parts of the medical science, not to speak of knowledge of human history, art and thought. I am quite sure that a great number of our pupils have completed their education in these directions, but I doubt if that is the case with everyone.

I do not pretend to propose reformations, but I do hope to find the young men better educated than the scanty requirements for admission to the leading medical colleges lead me to believe.

For comparison, I will give a short outline of the requirements in German universities, in natural history only. The young men entering the university have learned a great deal of natural history at the

gymnasiums, but before commencing the medical studies they must spend a whole year's course in natural sciences, such as botany, zoology, chemistry and physics, including practical work in microscopy and the chemic laboratory.

If we look at the schedule of Rush Medical College we will perceive that in the freshman year no more than 745 hours are devoted to study, in the following three years from 870 to 1,036. I think that one could very well dedicate 150 to 200 hours to the study of botany and zoology in the first year. But this, as other practical questions, must be considered at another time. Furthermore, I would wish for a certain knowledge of the German and French languages, already required by the Johns Hopkins University, also some ability in drawing. Without knowledge of these modern languages the medical student can only make use of the English literature and translations from the German and French, but as the greatest part of medical literature and the most valuable is published in periodicals, the student can not fully understand the medical literature of his time without this knowledge of modern languages. As the development of science is a very rapid one, scientific work is not possible without personal literary study.

But we have given enough detail on medical teaching. Let us now look at the American students and their qualifications for this science. As I have had many opportunities to teach Americans in European laboratories, I am prepared to speak upon that point with due reservation. First I will say something about the ladies studying medicine abroad. The greatest number I had in Zurich were Russian or other Slavs, German, Swiss and American. The best prepared for study were Swiss, American and German. In diligence they surpassed nearly every male student and as far as memory is concerned, it was very difficult for our male students to attain better marks than the female in the examinations. In the anatomic and microscopic work, over which I made personal observations, I found American ladies among my best workers; in the composition of publications there were some differences, however, depending more upon the personal character than upon mental faculties. One lady whom I highly esteemed for her assiduity and very clever work, labored somewhat under a too much developed pride, declining every help in the composition of her paper, which, based upon delicate microscopic researches, would have made more impression if the points and the deductions had been more thoroughly discussed. I do not know if that was a personal propriety, but I can understand that a woman prides herself on independent work; this pride can be a very good support in the hard work awaiting the doctress. I shall ever remember another American whom I had the pleasure to aid in her original work, as the best example of a medical student, fitted to do any scientific work. In this direction I must give the American ladies the first place and I hope to see here the same attainment in practical medicine.

As to the qualification of American men for scientific medical work, there can be no doubt. From my youth to the present time I have had many opportunities to come in contact with them as a teacher, and can openly express my opinion, that they would not, in any way, remain behind any other people, only being handicapped by their preliminary education and imperfect knowledge of foreign languages. But these slight defects were compensated for by a burning zeal for learning. My first experience dates back to the early sixties, when I was assistant of Professor Virchow. My first pupil, a man as old as I, was a Californian and showed, perhaps, more enthusiasm than your Eastern people, but I will never forget his open-hearted joy, when he understood a difficult matter, explained by the inexperienced teacher, in pretty bad English. And I have made the same observation, repeatedly, through a quarter of a century. All young Americans that came to me for study, were brave, joyful, enthusiastic people, but sometimes a little deficient in school education. They have all been my friends.

You, probably, all know the cause of these characteristics. The American life is a practical one, and the arts and sciences, here, come in second place. But I am sure this state of things will change before long. Deficiency in education is more and more improved and there are many men of the highest and most refined education in liberal arts and sciences. One of my friends in Germany, a learned man of high standing, a deep critic of Göthe, stated that he was astonished by American visitors, oftentimes finding that they had the most profound understanding of German literature and philosophy. That is a good indication of what can be done by your people in medical science also.

In medical practice we can certainly meet any competition, but not in medical science. The reason for this is to be found in the organization of our medical schools, which I have already touched upon. I understand very well that these organizations resulted from compromises and that under given circumstances, for the moment, higher attainments could not be demanded without driving a large number of students into the hands of so-called medical colleges, which one of my friends designated as "paper mills," a shameless scattering of diplomas for money.

Regarding these facts I can not find a better remedy than to place the higher education in the hands of the Federal Government. This would present many difficulties, as I know from my experience in Switzerland, and I would not like to interfere in practical questions. But we can take these matters out of the hands of the government and regulate them. By "we" I mean all good citizens who find that the prosperity of the country depends upon the education of the people. Very much is done in this direction. For our prominent scientific institutions are founded by private individuals, by donations, often rich men restoring a part of their earnings to the people, the well-conducted work of whom has procured these means. A political economist in Germany has named that the "inheritance of the people." "To give is more blessed than to receive," said Jesus, the greatest socialist. Yes, we will bless these rich men who will help in the education of the people and perhaps prevent the day of wrath. But not alone to the rich people should the appeal be made to assist in the educational question. Every physician, every patient is interested in this work and can afford to promote the higher medical education. I am sure the generous American people will favor progress in higher scientific education.

Here arises a very important question: Is the efficiency of such institutions for higher learning assured by money alone? Can money buy such institutions, as it can buy railroads or steamships?

The success in original scientific work depends more upon the worker than upon the external conditions of work. In my youth I have seen Helmholtz, the great physicist, work out his great discoveries in optics with the simplest means, and calculating with a child on his lap. The great mathematician, Gauss, when asked how he had found his new methods enormously enlarging mathematic conception, replied: "By repeated thought over the same matter." So we see that the personal conditions for scientific work are given everywhere, if there is a quiet place for thinking and men apt for this work. An exceptional mental faculty is not necessary for this, as not every learned man needs to be a genius. Continuous work is sufficient if the right way is laid open. Such indicators (Wegweiser) guiding the seekers after knowledge will arise in every country where learning is esteemed and supported.

I have experienced a striking example in my own life. I came to a university, in a land where science was not much developed, but proud of its great political power in a past time. This aristocratic people, with high self-consciousness, resented bitterly that so many strangers were called by an intelligent government to fill the chairs at the university. Some wished to injure the intruders, not personally, but by diminishing the number for instruction. A politician of high standing was induced to promote the attack, which would be adverse to the development of the university, when one of the professors opened the eyes of this political leader, showing the true aim of his associates, by saying: "You, as a liberal and reformer can not support an action against natural development. Give good seed to the soil and you will see good fruit ripen. Learned men can not be found everywhere. Take what you have and you will see, that in some generation, you will have enough support from your own countrymen." Thereupon the good man ceased to support his tempters and the chairs of the university are now, after nearly thirty years, occupied by a great number of native teachers, universally acknowledged to be of the highest rank.

What I wish to show by this experience is that higher study needs a thorough cultivation, continued for a long time. It is the same as with the cultivation of plants. If King Probus had not planted the grapes on the borders of the Rhine, the Rhine wine would not have won its world-wide celebrity. I tasted the California wines some forty years ago and I was not pleased with it, but now it is quite a different thing.

As we can not reform the whole system of higher education at once, we must commence slowly, warming and protecting the delicate plant sown in a soil in which, as yet, other plants, industry, farming, business of all kinds have grown so luxuriantly. If the soil commences to be exhausted by the one fruit, the good farmer will plant another. Science is a plant that has borne very good fruit in old Europe, why should it not develop here, when a young, fresh people, free from many prejudices of the old world, will strive to win the first rank in the great problems of the human mind?

But how shall we promote strong scientific work in our department, the medical science? In the first place you must change your opinion on the tendencies of the college or university. It does not suffice to have excellent instructors and well educated pupils, but we must have the will to give or receive more than medical instruction, sufficient for medical practice, or only for the examination. That would be the office of a high school or a university, in the sense of German universities. More than in other countries, you will find that these institutions are founded not only for education, but also for observation.

The difference between a school and a university is not always comprehended as it should be here, nor in Europe. As a young professor, I often spoke with business men about the difficult task of a university professor, but they did not understand me. "Oh," one said, "I think, in the first year, that it may be very difficult to lecture so much, but later one learns that." This is only too true, many professors learn to repeat the same lectures, and very amusing anecdotes are told in Germany about teachers accustomed to do this. One of these learned professors, reading his lecture absent-mindedly, also read the foot-note: "Here I like to make a joke." But I can assure you that this sort of professors died out, and from that time the acknowledged glory of German and other universities commenced to fill the world and attract people from every country. By these remarks I do not mean to say that German universities are perfect. As the devil always sows weeds among the wheat, so there the high position of professorship has attracted many inferior people who rely more upon protection than personal worth, and the egotism of many professors goes a little too far. Where there is much light there will also be shadow; but at all events we can look to German universities as the best examples of our scientific schools.

The first object of these schools is, and must be to educate the pupils to scientific and practical work. We must educate them to be independent observers, for a physician must have this quality, and without it he will not enjoy his task. He may fill his position very well, operate and prescribe, but if he does not look at his patient with the eyes of an observer he will fail to see many features of the highest importance. To the superficial physician not trained to careful observation, one case looks like another and he will be astonished if the expected effect of a certain remedy does not appear. It is, as with a savage people or a flock of cattle to the unexercised eye, they seem to be all alike; the observer, however, if he be an experienced traveler or a cattle grower, will see the differences. Certainly the good physician will learn, in the office and at the bedside, what he has not learned at school; but it would be better if he would go out into the world wholly instructed and experienced. Scientific work, done while a student, will aid the practitioner.

Hoping that you are convinced of the great importance of this truly dominant question, I will add some suggestions as to what should be done in this direction. First, every laboratory should be so arranged that a certain number of students and also of younger graduates could work, not in learning the elements, those must be understood, but for original scientific work. The smallest problem which we attempt to solve brings with it more elucidation than the reading and memorizing of a whole text-book. I fear that in our method of teaching learning, memory is too much relied upon, recitations prevail and not discussions. With young people, working on problems, there must be more discussion than recitation. I prefer a student who does not know so many facts, numbers or figures, but who understands the connection of facts

and how to make conclusions from the known to the unknown.

In the laboratory opened for the work of students, it is not necessary to give long lectures but to discuss the matters in a conversational manner.

Whoever is farther advanced in his work, will come and expound his results to the teacher and his colleagues. From the discussion new thoughts will arise not before given by the teacher. The scholars can learn without feeling that they are being instructed. I hear that such a system has been commenced here in private primary schools; if it is practicable with children, why should it not be with thinking men?

But in this matter another side is to be taken into consideration. If we have such laboratories who will work in them? The student is busy the whole day and the young physician must oftentimes attend to making his living. I do not think that people are poorer here than in Germany, where all this is done, but if so, the means for such work must be found and I do not doubt but it will be. In German universities we have so-called stipendia, which enable the poorer student to continue his studies, and beside that, we do not want to have medical proletarians (a very good word of Billroth). Whoever undertakes this noble study should first find the necessary means. The poor should not be excluded, but they must show the true qualifications.

For the young graduates, working to perfect their education, I would recommend the two appointments which, in my opinion, have made German universities great; first, the doctorate, obtained by scientific work; second, the private university teachers (Privat-Docenten).

The title of doctor, historically, means more than that of physician; it expresses a scientific qualification, shown by original scientific work. For that degree the publication of a dissertation is required, that is, a scientific treatise and theses, scientific questions which the applicant will defend in free debate against every one.

This venerable practice has been, as all human things, liable to deterioration, but it has influenced, in a very ostensible manner, the high standing of the profession. Innumerable students of medicine have been compelled, by this custom, to do original work, or treat clinic observations in a historic and critical way. Certainly the dissertations have awakened many literary talents which would have slumbered without this incitement.

Graduation or examination is necessary for the *Doctorat;* the latter is intended to show the qualification for scientific work and teaching. It is therefore indispensable for every physician teaching in a medical faculty.

The private lecturer, privat-docent, is a position quite unknown in English and American colleges; in France the professeur agrégé occupies nearly the same position. The title privat-docent is conferred by the faculty, on application, for a certain branch of science. He lectures in the same manner as the professors, mostly supplying gaps in the regular lectures or giving lectures on special parts of the science, elaborated by his own work. Many of the private lecturers are assistants, and are given the opportunity by their chief to deliver special courses. Without going into particulars, one will see that this institution is highly adapted to the education of professors.

I wish to submit this institution of private lectures to the earnest consideration of leading men in this country. Having so far only touched upon the student epoch of medical men, we can not make the whole importance of this discussion quite clear if we do not explain the standing of our profession and science in public and private life.

The profound change which our science has undergone in the last century will be made clear by some historic references. In the earliest times medicine was in the hands of the priests and based only upon occasional observations such as were made by the people. Hippocrates destroyed the secret and put these ideas into systematic order. The observation of facts became controlled and the work of physicians subjected to general rules, governed always by moral laws, highly appreciated at all times by the true physician. Since that time the work of the physician possesses a sacred feature. The patient needs to rely, with full confidence, on the knowledge and the truthfulness of his physician. He must know that he can not be deceived, although errors can not be entirely excluded. If the physician has any doubts consultation may be sought.

The medical profession must be so organized that it will be the best for the public. Quackery and evil conduct are more contemptible than in any other occupation. Where the government does not protect the medical profession it must protect itself, as is done here by the code of ethics, accepted by the AMERICAN MEDICAL ASSOCIATION.

This organization, securing the interests of the public as well as of the physicians, has sometimes roused distrust rather than confidence, but a thinking man will congratulate himself for having a medical profession caring for its honor. This position of the profession seems to be one of the principal features which attracts the young men to our lecture rooms. The practice is not so lucrative as in the old times, when one would say "*dat Galenus opes.*" The sense of humanity forms another attraction to the medical science; if the physician can help, he is loved as a god, and to the incurable he can always bring comfort and diminish their suffering.

In our time, in which the strife for gain seems to reign, the people have double interest that our profession preserve these feelings, and I hope that the public will support them. It will be to the interest of the patient that he follows obediently the prescriptions of his physician. I have seen so many patients ruined by their feeble, distrustful character, changing from one physician to another, thus losing the best time in which they could have been saved. But, on the whole, I have found the American to be an excellent patient, not excited, not nervous, but quietly doing and sustaining whatever was necessary. I have never elsewhere seen so much courage in enduring pain.

But the position of the physician in our time must be looked upon from another side. The change in the medical principles, effected in the last thirty years, is so enormous that weaker minds could not follow. On the whole, one can say that the younger generation has fully adopted the new theory of the bacterial causes of disease, though not always willing to make the necessary deductions.

How great this change was may be shown by an example. The two pathologic conditions, which alone nearly governed the old pathology, were "fever"

and "inflammation." The seething of bad humors or juices in humoral pathology, the struggle of the soul, the Archäus of Stahl, through many centuries formed personifications of disease, very apt to be attacked by the zealous physician, who mistook the signs or symptoms of the disease for the disease itself. Under this delusion such things as "essential fever," or fever in itself were spoken of. Later, under the auspices of a more developed physiology, one tried to explain these phenomena by the doctrine of irritation. Albrecht von Haller has shown that irritability is the general property of all living substance, a property consisting in the outbreak of the genuine activity of the organ, after an external influence has acted as an irritant. So the muscle will contract, if it is acted upon by mechanical, electric or chemic influences in the same manner as it does when irritated by its nerves through the action of the brain or by an electric current. The action producing the irritation can be of very different nature, the effect produced upon the body is always the same. You will understand this if you think of the works of a clock moving in the same manner, whether its spring or pendulum be put in action by the hand, by an earthquake, or by removing a hindrance.

This theory seems to best explain the two symptoms governing, or of disease itself. From Broussais to Virchow this explanation prevailed, giving very good indications for therapeutics. If the irritability of an organ or the whole body is increased, one has recourse to remedies of a soothing, mitigating action; if the irritability is deficient, one must irritate; if the two processes do not help, according to the doctrine there only remained the counter-irritation (contrastimulus). If, for example, an inflammation of a knee-joint was treated without good result first with cold later with warm poultices, there remained only a counter-irritant, the burning. The consequence was that old country women, shepherds, etc., sometimes had greater success than learned physicians.

This inadequate doctrine was destroyed by pathologic anatomy, which, from the end of the last century, was more and more developed in Europe, first in France and England then in Germany. After many great predecessors, Rudolph Virchow developed a new doctrine which seemed, at first, to cover every logical desire, namely, the cellular pathology.

This doctrine showed the composition of the body to consist of a great many living organisms, the so-called cells, bound together by the common action of vessels and nerves. This theory disclosed manifold processes in disease, in their minutest details; it enriched our knowledge, but it did not advance our therapeutics; to the action of cells was confined the regulation of irritation. So the cellular pathology was thought to have found in the action of the cells, the whole essence of disease, and the question, Why do the cells act in an abnormal manner? was asked no more.

For Virchow and for many of his pupils and followers, the question of cause did not exist. He declined to go farther, with the oracular answer of a sovereign, "We can not know all things."

I admire R. Virchow very much, having been for a long time his pupil and assistant, having learned from him the finer distinctions of pathologic processes. I acknowledge that he has enriched pathology more than any one else before him, but he did not have the right to command a stop to all other progress in our science. The word "why" must always be used, if the knowledge does not cover the whole truth and does not explain the cause of action.

Already a new dawn announced the bright day of our present knowledge. Medical historians and geographers remembering the spread of the great plagues, and enlightened thinkers, as Henle, had, contemporaneously with Virchow's cellular pathology, proclaimed the theory of the external origin of contagious diseases, from living matter, the germ theory hinted at in oldest popular medicine. The microcosmos were opposed by the macrocosmos in pathology.

In our time the investigations in this direction had commenced, first without regard to pathology. Pasteur had detected the origin of fermentation due to microbes, destroying the physical contact-theory of Justus von Liebig. But Pasteur declared, fearing to oppose the dominating school of pathology, that these discoveries had nothing to do with pathology. When later, in the seventies, he transferred the germ theory to pathologic questions, he had to suffer many persecutions, as I know from his own mouth.

Already, many years before Pasteur recognized his error, the parasite of anthrax was found by two German observers (Pollender and Brauell), but were, by all leading men, declared as inorganized, or if bacterial nature was conceded, as consequent to the disease or organisms developed in the dying animal.

A sort of madness seemed to have controlled the defenders of the old doctrine, so that even the excellent experiments of Davaine did not change the minds of stubborn *doctrinaires*. Davaine isolated these organisms and showed that a single one was sufficient to infect and kill an animal. The development being first local, at the place of implantation, and the general infection could be prevented by destroying or extirpating the infected part.

Lister developed the same idea, the external infection in wounds, and commenced a reform in surgery, which was more and more refined and perfected later.

At the same time I demonstrated the propagation of certain bacteria in the internal organs of the body after they had found entrance through natural openings or through wounds. The abundant material of the Franco-German war of 1870 gave me the opportunity to show that these organisms, while spreading in the organs, always precede the cellular derangements. Cultures and infection of animals in these and other cases of infectious diseases showed the causal nature of, probably, all contagious diseases. By separating the bacteria from fluids, in the cultures, by filtration, we could demonstrate that only the bacteria produced the disease. It was shown by Tiegel, my assistant, and later in Tokio, that the fluid had only toxic influences (1871 to 1873).

I also was very vigorously attacked from all points, especially from the medical side, whereas other learned people, such as Tyndall, were convinced of the importance of the new development in pathology. Certainly many imperfections, unavoidable in a new research, may have given some reason for criticism. The later researches of Robert Koch and others decided the battle on the fundamental principle in pathology. This can be pronounced in the following thesis: *Disease is the struggle of two organisms, the one invading the other.*

If I have explained my opinion clearly enough you will see what can be done for scientific medical education. By my lectures, which I will give in this

college, I will attempt to inspire the student to do original work, which is the only way to promote the scientific standard.

ORIGINAL ARTICLES.

A MEDICAL ASPECT OF CRIME.

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY A. C. CORR, M.D.

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Aside from the uncivilized barbarism that would induce a barbarous or half civilized person to commit outrages on the individuals of a neighboring tribe or state while practicing obedience to his own tribal laws, there are exceptions in which the individual is not true to his own tribal or state laws. These he continually violates, through some unknown impelling force that makes him act in utter disregard of the good, safety and comfort or all. This latter violation is usually called crime.

Now in all the mutations of the silent revolution that has wrought so wonderfully since the debut of an organized Christian civilization, we have room for so many different phases of a variation of progress that we have amid a high Christian civilization, great irregularities in which individuals are untrue to their assumed, acquired and inherited responsibilities and obligations, and tend frequently or constantly to violate those laws, written and unwritten, which are for the good of all, both living and unborn. Besides this variation as between civilization and barbarism as to the highest types of that which we may call tragic crimes as between nations, there is quite as much variation or want of consistency in our civilized Christian and free country between communities and states. What is a crime in one state or city is not necessarily such in another. What is a crime in one section is not in another, and some things that are a violation of law on one day in the year or week is not on another. Amid this almost inconceivable and inscrutable maze of varying conditions, individual and collective, local and general, we are called on in this ASSOCIATION, established for the well-being of society, to discuss the Medical Aspect of Crime.

As far as the discussion in this paper is concerned it shall be based on the fact, that the brain and the nervous system are the physiologic organ of the mind and intellectuality, and that every grouping of ideational activity, or well defined mental faculty has its origin in the functional activity of brain or nerve cells and fibers, either local as in areas, or disseminated throughout the nervous system, or both local and disseminated, and that *morality*, the ethical sense, the sense of moral uprightness, of justice, of right between men, people and things, has such an origin; that it is a faculty of the mind just the same as the will of the reason, and that as such it is subject to the same laws as the functional activities of other organs; that it is susceptible of being cultivated, of being repressed, of becoming increased by education and activity, of being diminished by neglect and occupation, of being perverted as in diseased conditions manifested in a class of criminals; that it is deficient in many persons to a greater or less degree. In other words there are children, youth, adults and mature persons who are moral imbeciles from congenital deficiency of the moral sense.

This faculty of moral sense or morality is the inhibitory faculty of the mind, the let or hindrance to the human expressions, activity and conduct, modified by the will, the reason, the judgment, the understanding and the impulses and intellectual delusions.

This faculty of morality is the latest and best results of man's long continued culture and its exercise is the highest function of his very complicated cerebral and nervous mechanism.

With this physiologic source and condition of crime before us its treatment is greatly simplified. When amid the mutations in progress of development from barbarism to civilization and advanced christianization, influenced by atavism and connation, the impulse to commit an act is felt that belongs to the criminal calendar, that is, to do that which is in disregard of the rights of others and is hurtful to the well-being of the civil social compact, and is in violation of law written or unwritten, the individual sense of justice and moral uprightness intervenes and inhibits or sanctions the act, just in proportion to the development of the moral faculty of the individual.

Now, would you have crime lessened? Then you should cultivate and develop the moral sense and repress the emotions. I can not give here a tithe of all the details this cultivation would embrace, but certain it is that some code approximately correct should be formulated and put in practice expressly for this purpose. Something that would teach children as definitely to exercise the moral and ethical faculties as there is to teach the exercise and development of the reasoning and intellectual or mathematical. Children should be taught as early as possible *that there is a principle of right and justice in the abstract*, irrespective of any mere religious sentiment or superstition. Each child ought to be impressed, if in no other way, by mere precept in a round of words, that he who has not an average moral perception is a moral idiot and is to be held in apprehension as one unsafe to trust. Lessons in morals ought to be formulated and a spirit of emulation engendered that would cause them to strive with each other to learn the most of them. These lessons should be elementary and advanced and graded in adaptation to the ability of each child to grasp and comprehend them. *And every school of whatever character*, should be required to rigidly teach them; *for the exercise of morality, to the extent of being just and upright in conduct and character, is the best and highest function of the human brain.* In this course each crime should be designated and its heinousness expatiated on and a thorough understanding of its turpitude required, and that its commission and practice would lead to still further immoral practices in the individual, propagate the same or similar practices by inheritance to others. *And over all this ought to be held* the *terror* of *lawful punishment.* For he who can not or will not learn, let him be deterred by fear of pain and penalty and let the seal of disapprobation be placed on every act that violates the least of the moral code.

This much should be done for the individual from childhood up, and should not be neglected, and whatever religious influence that may be deemed proper should be added. If anyone can be deterred from criminal or immoral practices through fear of impaired *future* happiness, by all means give him enough to answer the purpose. It is the practicing that cultivates more than the mere tendency inactive.

At present the public schools in our country, through which most of this grade of work in moral culture must be done, is incompetent for the task. There is among school teachers as well as among the laity in general, no definite idea as to the difference between morality and religion, between moral uprightness and the mere ritualistic processes of a beatific worship.

I once had occasion to investigate this subject among public school teachers in my own State, and I dare say they average with those in other States. Some said morals is a theological question, and if we attempted to teach it in schools it would give rise to religious sectarian wranglings that would impair the harmony and usefulness of the school, and if this or that teacher inculcated his or her moral ideas (religious views) it would create dissension and independence among the patrons of the school because of their varied religious beliefs. One who was in high esteem as principal of public schools said in substance "that the question of how to promote the morals of my pupils has given me a great deal of anxiety, and is a matter I never felt satisfied how to manage, owing to the varied religious views entertained by my teachers and pupils. I have in one school a class of six or seven studying natural sciences, two members of which are believers in the theory of evolution, and it gives me a great deal of annoyance and anxiety for fear they will ruin the morals of the remainder of the class and in fact infect the whole school." Other teachers replied to my queries that they would leave the question of morals or religion to the Sabbath schools, the churches, the sectarian schools and the colleges. There were still others who frankly admitted that the question of teaching morals was not well understood and criminally neglected.

Now, I do not think I misrepresent the great body of divines and religious instructors, including all denominations from pope, priest, bishop, theologic professor and clergyman to pastor, when I say that they are not more systematic and definite in their conception of in what moral uprightness consists and how crime is to be prevented.

Nor has the legal profession elucidated and proposed a better plan than the hurling of statutes and sentences of punishment. Now, what shall I say of the medical profession? Have we elucidated any better or well devised method of defining morals and cultivating the moral sense? In fact I doubt not that when this point is discussed that it will reveal quite as wide a range of different ideas as to the moral sense and faculty of the brain and mind as the classes to which I have referred.

But having to do with the brain as an anatomic organ and its physiologic phenomena, the mind in the abstract, it is our incumbent duty to determine whence the source of criminality in the individual as far as his mental composition is concerned and what additional plans shall be formulated for its prevention. The conclusions arrived at on this point shall constitute a basis for the consideration of the medical aspect of crime.

The moral defect with its criminal tendencies is always congenital, many times hereditary and always modified in a greater or less degree by *environment* and *synergistic influences*.

By *congenital* I mean the inborn tendency, which mental condition is a derivative complex, much like a double decomposition in chemistry, and by which a mental composition is transmitted congenitally that is unlike either parent in moral perception, yet like one or the other, or both in many other respects. This is *congenital* moral imbecility, while an *hereditary* moral imbecility must be like one or the other or both parents.

The congenital variety of mental complex is that in which criminal children are born of amiable parents, or amiable children of criminal parents. Many instances of both varieties I have observed.

Having established in a fairly plausible way that the tendency to crime is inborn and consists in a defective mental composition in which the moral perceptions are weak or deficient and that it may be cultivated like any other mental faculty, it may be well to consider some one or two conditions of environment or synergistic influences that coöperate with a slight or marked criminal tendency to make the criminal. To a large extent all men are creatures of association or environment. Many with only slight tendencies are schooled out of or away from crime. While many are schooled into it who but for such synergistic influences would have always remained guiltless.

Beyond these suggestions I would be recreant to my trust were I not to arraign the liquor traffic as being the greatest despoiler of human morals and well being. While we do in our associated capacity much to school children and youths out of and away from crime, yet we tolerate and perpetuate a traffic that unschools and dissipates much that our well designed efforts have wrought. The use of alcoholic beverages is always to degrade and debase the moral sense in the individual and disorganize society. It never elevates or cultivates a moral sense, but degrades and tends to make criminals just in proportion as it is used. It never sent a child to Sabbath school but has sent many to the penitentiary and the gallows. If a man uses a thousand barrels of it, it does not do him as much good, based on his necessities, as the eating of a teaspoonful of meal.

Its tendency to produce crime and make criminals can be proven by the history of any county in the United States where the sale and use of it has been prohibited for only one year, for just in proportion to the efficiency of the restricted sale and use of the beverage among the citizens will crime and criminality have been diminished.

I do not think that the destruction of the liquor traffic would by any means prove a panacea for all crime, but its synergistic influence amid a degree of moral imbecility is at the present time greater than all other influences combined.

Some eminent medical gentlemen have argued that some one or more organic instincts are responsible for most all the crime, and that a surgical procedure or operation would prevent crime and reform the criminals. The most remarkable contribution to the discussion of this character that I have seen is a paper by Dr. Robert Boal to the Illinois State Medical Association in 1894, entitled "Emasculation and Ovariotomy as a Penalty for Crime and the Reformation of Criminals."

The discussion was made under nine considerations which were practically these:

1. "We are taught by both physiology and psychology that all human beings are controlled in their conduct and actions, and appetencies are expressed

through their organic instincts. Of these, two are of paramount importance. They are love of life and sexual love. The first is the strongest and outlasts all others. Next is love of sex, which dominates human conduct and desires. Its bestowal was wise, but when uncontrolled it is potent for evil."

2. "The greater proportion of the crimes characteristic of the criminal and vicious classes may be traced directly and indirectly to the influence of this uncontrollable and dominating sexual love. The rapes, homicides, suicides, defalcations and embezzlements may be ascribed either directly to sexual love, or to influences associated with it. So well is this understood that when we hear of the cashier of a bank absconding with its funds, or a trusted clerk robbing his employer and betraying his confidence, almost the first comment heard is, 'Oh, there is a woman in the case.' With scarce an exception, there are few vices in the calendar of crime, licentiousness, prostitution, intemperance, gambling and others that are nameless, that are not designated, associated with and maintained by sexual love."

3. "The physical or structural characteristics of the criminal and defective classes are produced, reproduced and multiplied, and perpetuated by intermarriage or sexual commerce of persons of like defects, and we have accordingly the results of living activities of matter or what is called heredity."

4. "By the imposition of the penalty of emasculation and ovariotomy we destroy the capabilities of these defective criminal classes, to inflict injury upon society, thus depriving them of the power of reproduction."

5. "For the purpose of intimidating others from the commission of crime, while neither cruel nor vindictive it is more terrifying and repulsive, next to death, than any or all modes of punishment. The loss of sexuality as a mark of manhood is so utterly abhorrent to all men that it would be avoided if possible by all individuals not hopelessly insane."

6. Practically, "By unsexing all constitutionally depraved convicts we would curtail such production and aid nature in natural selection and the survival of the fittest."

Seventh and eighth considerations are conclusions based on the acceptance of the six preceding referring to the results and effects of emasculation and ovariotomy on the disposition of the individual, and that as a punishment would not excite revenge, etc.

Ninth consideration is a general statement as to range of application of the punishment, to the effect that it might be safely applied to insane persons, cranks and paranoiacs.

To this ninth consideration I have only to ask, Would emasculation and ovariotomy change the delusions of the insane and make them safe citizens at large in society? I have quoted these "Considerations" because they embody an idea that is held by many both in the medical and legal professions. I think the idea is untenable as a whole. I discussed them in a paper before the same society a year later, when I replied to the "Considerations" seriatim. In the discussion of this paper Dr. N. S. Davis of Chicago, said, "I have seen nothing in my observations in human society to make me believe that human depravity is greatly ruled by simply the sexual organs in either sex. That they are capable of exerting a predominating influence in individual cases, as much and probably a great deal more owing to bad training, bad education, bad surroundings than to any inherent vice in these organs, is undoubtedly true, but whether they have any more tendency to produce crime than a man's stomach I very much doubt. I think it has been shown that a well developed dyspeptic is about as likely to go wrong as almost any other class we might enumerate. It is not, in my estimation, the fault of the organs that we propose to *excise* as much as it is a fault in the brain that accompanies them, and if you want to get rid of the tendency to crime you will have to excise some of the cells of the brain, if you can find the proper ones, instead of the sexual organs."

THE PHYSICIAN AND THE CRIMINAL.

Read in the Section on Neurology and Medical Jurisprudence at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY J. B. RANSOM, M.D.

PHYSICAN TO THE NEW YORK CLINTON STATE PRISON, DANNEMORA, N. Y.

The axiom that the proper study of mankind is man has evidently not long been applied to criminal man, for careful search reveals a striking dearth of records in this regard. Until 1841 nothing worth recording had been done in the special observation of criminals, and the science of criminal anthropology, strictly speaking, was only begun in 1854, and not until Lombroso's work "The Criminal," was published in 1876 did criminal anthropology assert itself as an independent science.

There are several instances where observations have been published as to the characteristics of criminals, but no connected and definite work was done. (Immediately after the publication of "The Criminal," however, numerous works on criminal anthropology were published, especially in Italy.) All the valuable work done in this line is of recent date; good literature in this field is therefore limited, and carries with it the conclusion that the whole subject has been surprisingly neglected, and he who would enter this field of work must find himself somewhat lonely. On every hand, however, there are evidences of an arising interest in this feature of social life. In France, Germany, England and Italy more especially, criminology is fast assuming the dignity that rightly belongs to this important and essential science. In our own country, however, no such concentrated results have obtained, and the study of criminal man is a slighted one and the subject little understood. More striking is this when we consider that such study is not without necessity, for a glance at the census figures of the United States will show a proportionate increase of incarcerated criminals of nearly five times from 1850 to 1890 inclusive.

Year.	Prisoners.	Ratio of population.
1850	6,737	1 in 3,442
1860	19,086	1 in 1,647
1870	32,901	1 in 1,171
1880	58,609	1 in 855
1890	82,329	1 in 757

The number of homicides in 1889 were 3,567 in the United States, in 1895, 10,500. This, too, in the face of the fact that society and the courts and general public sentiment has constantly grown more lenient, and the number of unpunished criminals has largely increased; as for instance, according to Andrew D. White, if the whole number of murderers for the six years last past were in prison there would be 40,000; as a matter of fact there are only 7,300. Neither is

it because we are unaware of the existence of crime, for it is everywhere present; the newspapers of the day flaunt it in our faces, and our own observations make known to us the existence of a large criminal class, which is surely and rapidly invading every department and function of our social and political life. It is not necessary to enlarge upon this unpleasant feature; it is apparent to every one. The condition confronts us; it remains to determine the causes and apply the remedy, and that without delay. These causes are many and various, but it will only be within my province to speak of those which relate to us as a profession more particularly, and seek to determine just what our responsibilities are in this whole field of scientific and sociologic work.

It would seem that a common interest in the study of man in a biologic sense would have elicited the very best efforts of the medical profession, inasmuch as man has always been the humble recipient of all the experimental work of an aggressive profession since its conception, but that such has not been the case is apparent by the very few medical men who have been engaged in this important branch of science. It may be assumed that this was chiefly due to the fact that in the early history of medicine, the profession of that day were so intent upon the problem of cure, a—to them—much more important consideration than man himself. In a less remote period medical men were engaged in the elucidation of theories, and still more recently earnestly in pursuit of man's common enemy, the microbe; not that this work has not been necessary, and of inestimable value to a common progress, but it does seem paradoxic that its prosecution should have so completely obscured its object, man!

Only occasionally had the physician devoted himself to this work up to the time of Sampson, Lombroso, Forbes Winslow, Camper and Lallemant. It is, however, in our own country that the least attention has been paid to this subject, excepting in isolated cases where men like Drs. Arthur McDonald, Jacobi and Flint, and physicians connected with penal institutions have urged the necessity of criminal anthropology as a branch of medical work. This has been, however, so fragmentary and unclassified that it has not assumed at any time an organized effort in this direction, and therefore has elicited little interest and accomplished less; but the rapid advance in this work recently made in Italy, France, England and Germany, and the alarming ascendency of crime, so diametrically opposed to the progress of our time, the inability of our present administration of the law, and of the penal system to cope with the necessities and conditions of the hour, have forced into consideration of society and government a problem which should have had its solution, or at least intelligent recognition, as paramount to their safety and well being long ago. As it is in the closing years of the nineteenth century with all its marvelous achievements, with all its progress in culture and refinement, society finds itself confronted by a condition which threatens its very existence. Society is finding out that it has nursed or tolerated within its own bosom the upas which may poison it to death. Aroused to a recognition of the fact that such a condition exists, it finds itself in possession of only the crude elements of an embryo science, which to be adequate to these demands must be rapidly developed into one, comprehensive and efficient. Crime and the criminal must receive more weighty consideration by all concerned, or the integrity and strength of our social and political institutions will be subjected (they are already threatened) with serious disaster therefrom. Society has heretofore been content to relegate this whole feature to the courts and the penal code.

It needs no demonstration to show that the modern trial, sentence and punishment of the criminal, so largely based upon assumption and in ignorance of the criminal himself, has measurably failed to protect society from the rising tide of crime. In spite of the exercise of their powers crime has continually and markedly increased. This is in the largest sense due to the fact that the procedures of the courts and administration of law, have based their action upon the theory that its function was first to detect crime, and then to punish it, losing sight of the fact that all men are not alike, and that punitive measures could only be efficient when they take into consideration the individual characteristics and apply the treatment to the criminal's special needs. Intelligent trial and sentence can only be secured when we have a scientific knowledge of the criminal, the nature of his crimes and the natural and social phenomena connected therewith. Such an administration of criminal law can only be obtained by the thorough classification of the criminal into distinct and characteristic types. In the words of Flint: "Before a disease can be treated intelligently it must be diagnosed."

More especially is this true when those types represent physical and psychic anomalies.

I think, in the light which recent investigation has shed upon this subject, that it may be indisputably asserted that crime is often the natural outcome of disease, and that into such causation enter many forms of deviation from the normal standard in both the physical and mental organization represented by arrests of growth, deformities, asymmetries, intercurrent diseases, as well as psychic aberrations and disorders.

This whole subject is at present in a state of chaos, and it is impossible to draw definite conclusions from the data at our disposal; naturally enough as the possibilities of this field have opened up to view, there has dawned upon the consciousness of some the idea that there is such a thing as a natural criminal, and that the commission of crime is not always the result of a long process of evil doing, instituted by telling the first white lie, which precedes the going through of the story book stages of moral decline which go to make up the average romantic criminal. This conception leads them to come hastily to conclusions based upon a few meagre details and incidents, and with many learned phrases rush into print seeking to establish the theory that society has made an awful mistake, and assert that crime is and always has been a disease. A great deal is said upon the subject which clearly shows an utter lack of knowledge and a misconception of the whole subject.

All this grandiloquent flourishing of pamphlets and inclination to rush in where wise men fear to tread might well be expected with reference to a science of less than half a century's growth; neither is this limited to the over-enthusiastic, for even our most careful students and painstaking observers in the enthusiasm of first discovery have made many erroneous statements and drawn conclusions altogether too arbitrary; but when all this cyclonic agitation of high sounding terms has ceased to confuse our senses,

we shall see that these conditions are but the natural accompaniment of the birth of a new science, and that soon from out all this incoherent mass of nebulistic data will be crystallized constructive elements, which when assembled by the skillful and competent men of our time, will constitute a perfected science of criminal anthropology, applicable to the needs of society, and protective of the general welfare. In the study of the criminal there has been a tendency to base all conclusions upon anthropologic data; even Benedict and Lombroso have gone so far as to assert the existence of a criminal brain as a distinct type, which I think is unwarranted by what has been derived from still later investigation. To these extreme views I certainly do not assent, for in the words of Jacobi, "The criminal can not be considered an entity, but as a being possessed of characteristics as various as those of other types of men;" neither would I go so far as Rondeau when he states that "all assassins are patients as are all other criminals." I do not believe that all criminals are diseased in the common acceptation of the term, nor is all crime the result of such disease.

Many criminals are diseased and present anomalies of structure as the cause of crime; there are however criminals who are so from environment, and from the inhumanity heaped upon them by men. There are also criminals of circumstance or accident. Neither do I believe that the rogue can be told from the honest man by the shape of his head alone, or by his physiognomy, or the deformity of his jaws, ears, nose, or lips, or by any other one of the numerous anomalies we find in all types of mankind, and especially in the types representing the lower strata of society, neither have we as yet the data representing the normal type of man, with which to compare the abnormal.[1] When we have we can make more positive statements. It is only by the sum total that an exact estimate can be made that is by a careful consideration of all the anomalous conditions which are grouped in and about the criminal, physically, psychically and socially, and a balance struck between abnormal tendency and inhibitory power that a correct conclusion can be reached. It is the preponderance of tendency which must determine the character of the individual. There is however abundant evidence and well established data to show that crime is largely the natural outcome of disease in the perpetrator, and that by comparison with other men, the criminal class shows a preponderance of anomalous conditions, as for instance, in one of Lombroso's tables of the measurements of the skull we find "that men with normal skulls were three times as numerous among soldiers as among criminals. Of men with a noteworthy number of anomalies occurring together, out of 711 soldiers there are only three or four, there were three times as many amongst criminals as amongst soldiers, and there was not one soldier of the 711 who showed an extraordinary number, say five or more," and the same is true of physiognomic, psychologic, and physiologic anomalies amongst criminals.

As a rule special anomalies do not necessarily indicate special tendencies to certain crimes, but as stated in my paper, "Shall Insane Criminals be Imprisoned or Put to Death?"[2] in the examination of several thousand criminals, I have been lead to believe that, as a rule, when in the inherent criminal the right side of the cranium, that is, indicating the right hemisphere of the brain in excessive development over the left, especially where there is a marked fulness over the paracentral lobe, the possessor's impulses lead toward homicide. I have repeatedly been able to place my hand upon this part of the head of criminals, and designate their crimes to be either assault or homicide without any previous knowledge of their history or themselves.

More recent observations have substantiated the above, especially the last criminal executed at Clinton Prison for an unusually unprovoked and brutal murder, the right side of the brain weighing more than the left.

"To the student of criminal anthropology, however, every characteristic in the criminal's natural history has an anthropologic, physiologic and psychologic value in itself, and must be a technical study," that he may arrive at a correct conclusion as a whole; therefore it is not altogether from apparent anomalous conditions alone that he would assume that the man presented a criminal type, or was criminally diseased, for crime is often due to intercurrent disease; especially to chronic diseases of the heart, meningitis, tuberculous disease, and syphilis; criminals are especially prone to diseases of the heart. Out of 2,011 men examined by myself in a general way on admission into prison, 239 had gross heart lesions, and many more obscure and less important ones. I should estimate that 25 per cent. of all criminals would show disease of the heart or of the great blood vessels. When we consider the relation of the heart to the circulation of the blood in the brain, we shall understand how a diseased heart can produce brain disturbance. Meningitis is also a prolific cause of crime, especially those of assault and homicide; this is particularly noticeable in the latter. It is not necessary for me to refer to the maniacal tendency due to inflammation of the meninges. Any one who has conducted a patient through the several stages of a meningitis, knows well the effect of the disease upon the mental condition. The result of meningitis is often a thickened patch, a softened area, or a circumscribed adhesion, any one of which is capable of driving the unhappy possessor to the most fiendish acts of violence; as the spur to the horse, it urges on the diabolical impulse. In autopsies upon criminals who had committed assaults or homicides, it is very seldom, if ever, that some such thickened patch or atrophic area has not been discovered. In my last case the adhesions were extensive. M. Dally, from a twenty years' experience, says that "all criminals who have been subjected to autopsy after execution gave evidence of cerebral injury, often undiscovered prior to autopsy." From my own experience I believe this injury is usually the result of some form of meningeal inflammation. Syphilis is well known to cause grave neurosis, and among criminals a very large percentage are syphilitic. The effects of syphilis upon the brain, either in the deposit of gummatous tumors, or in the production of degeneracy of brain tissues, is a prolific cause for mental disorders, especially of a temporary nature. I have seen a number of criminals who were, no doubt so, from the effect of syphilis, or its injudicious treatment. Tuberculosis is also a prime factor in the problem of crime. Many a man is a criminal because of the presence of tubercular toxins circulating in his brain, or to the poverty which this inability to earn his livelihood brings him. Almost every

[1] It is encouraging to know that there is a decided movement in the endeavor to establish a normal structural gauge for men, by the use of instruments and technical observation.

[2] Referred to later on.

physician is familiar with what is called the insanity of phthisis. Several other diseases are distinct causes for crime, especially those connected with the genito-urinary organs.

A large amount of data might be offered which would go to establish the fact that a large proportion of crime is the direct and natural outcome of some form of disease. I shall not enter into detailed minutiæ or technicalities; neither shall I weary you with an array of craniometric figures and anthropologic data, for such information is best found in the works of Benedict, Lombroso, Lacassagne, Ferri, Ferrero, Garofalo and Dugdale, but simply attempt in a general way to institute a discussion of the relation of the physician to the criminal problem. I shall also purposely avoid the sociologic aspect only in so far as is necessary to define this relation.

If it be conceded that crime is the result of disease we shall have a conception of the criminal, which at once changes the whole application of the principle of treatment, revolutionizes sociology and annihilates many of the more primitive methods of the administration of so-called justice. Surely all efforts should be directed not toward inflicting upon an already unfortunate individual still greater misfortune, but in assisting him to overcome his infirmity. Now if this was true of all criminals, and if the question of degree did not enter so largely into the problem, the whole matter would be simplified; there are, however, questions of degree and questions as to what proportion of crime is due to disease, recognizable and estimatable. Herein lies the opportunity for the exercise of large common sense, and in the consideration and treatment of the whole subject, let us be guided by it.

Much confusion arises from false notions as to what the criminal is. Too often the criminal is considered an abstract quantity, as if belonging to a different order of beings; such is not the case however, they are men and women, creatures of hope, of longing, and of fear. Our ideas of the criminal should not lead us to think that the mere fact of putting a man behind the bars, and habilitating him in stripes, at once assigns him to a different species, for it will be found that the criminal is much like other men, amenable to treatment and improvement. The distinction which criminologists would make in the theory that the criminal is of degenerate type, does not apply to the incarcerated criminal alone, but also applies to millions who have never seen the inside of a court of justice, or felt the dampness of a prison cell. There is no distinction from a psychologic or physical standpoint between the incarcerated and the unpunished criminal, other than the results consequent upon his environment.

It is because the conditions which enter into the criminal make up that lead to the commission of crime are not better understood, and the naturally fallacious conception as to what the positive school of criminology advocates in the scientific treatment of crime, that efforts looking toward the improvement of our methods of treating the criminal are so fruitless. The positive school of criminology does not desire to divorce the criminal from his responsibility to the law, or mitigate the punishment of crime, which is its inevitable auxiliary; it proposes to punish crime, not, however, in a retaliatory or vengeful way, but, in so far as is possible, use its punishment as a means of restoring the offender to his former rectitude before society and the law, recognizing "that crime is not always of the free will, but rather a natural phenomenon which can only disappear when its natural factors are eliminated." It seeks rather to adapt measures to conditions rather than attempting to make conditions fit measures, and recommends a plan of treatment based upon the classification of the criminal resting upon scientific anthropologic data. Equally fallacious notions are entertained as to what is the part of criminal anthropology in the scientific treatment of the criminal. The modern criminologist does not seek to base conclusions upon anthropologic data alone, but as Ferri puts it: "All that he seeks of anthropology is this—Is the criminal, and in what respect, a normal or an abnormal man? And if he is abnormal, is it congenital or contracted, capable or incapable of rectification?" This is all, but sufficient to enable the criminologist to come to positive conclusions covering the measures that society can take to protect itself against crime. This then is the summing up of the whole matter: 1. A correct and efficient treatment must rest, as in all other departments of human affairs, upon the proper classification as a primary and essential step to proper observation. 2. That such classification to be of value must rest upon anthropologic data. 3. Inasmuch as anthropology is scientific and positively medical, the essential work of classification naturally falls within the physician's province, and can alone be performed by him.

Not only is the object of classification to admit of a more intelligent study of the criminal, but it is through such classification alone that proper treatment can be administered.

The classification of the criminal also predisposes the necessity of proper classification and grading of penal institutions, so that when the criminal has been assigned to his class by the courts, he can receive the treatment best suited to his individual requirements; the insane or weak minded criminal should be sentenced to a hospital for the care of the insane; the born or habitual to an institution specially calculated to care for confirmed and incorrigible criminals; criminals of passion and occasion, to short term institutions where they could receive treatment looking to their reform. To accomplish this, all of these institutions should be graded to facilitate their special study and treatment. The criminal having in him the possibilities of reform should have opportunity for such reform. The confirmed and hopeless criminal should be excluded from society permanently. This phase of the criminal's treatment is more explicitly treated of in my pamphlet published in November, 1895, "The State and the Criminal."

Having been properly graded, every institution devoted to the care of the criminal should be provided with a physician specially qualified not only for the proper care and treatment of the ordinary ills of the criminal, but abundantly able to conduct a proper study of the criminal based upon anthropologic data and criminologic factors. Not only will such efficiency ensure proper grading and intelligent treatment of the criminal, but it would furnish to the science of criminology valuable data upon which to base still further conclusions. The first step in the classification is the appointment to every criminal court of a competent physician to assist the court in determining expert questions relative to the criminal's physical and psychic condition at the time of trial.

The physician in this work of classification should

bring to his aid all instruments of precision necessary to the proper measuring and estimating of the criminal from this standpoint such as the sphygmograph and craniometer.[3] This would only apply to cases not having been previously examined and recorded.

First in the proper classification of the criminal is his division into two great classes, curable and incurable; in so far as results are concerned, this covers the whole ground, but that such a division can be correctly made, necessitates the classification of the criminal with reference to his type, especially in the application of treatment to that numerous class of curable criminals. I have therefore adopted as a most useful classification that of Ferri, which divided the criminal into five classes, to wit: 1. The insane criminal; 2. The born criminal; 3. The habitual criminal. 4. The occasional criminal; 5. The criminal of passion.

It will be found that this classification meets the largest requirements possible under our present knowledge, but unmixed types of criminals are unknown and criminals can not be precisely classed under certain categories, for they frequently exhibit mixed propensities, and merge from one type into another. And in one some of the characteristics of several types may be blended. This classification, however, is a practical one and based upon sound observation.

The Insane Criminal.—There can be no scientific distinction made between the criminally insane and the insane criminal. The distinction is only an associate one and refers to conviction. True criminal science knows no distinction between the incarcerated and the criminal at large. To him the abnormal condition which controls a criminal act, constitutes the criminal identity. The courts have shown their utter inability to differentiate between the insane criminal and the ordinary. If a man has within him a tendency sufficiently strong to cause him to commit offences against person or property, he is a criminal, and if such depends upon an abnormal mental condition, he is an insane criminal; the only distinction necessary to make is in a penologic sense, and that is the distinction between the insane convict and the insane criminal. The question turns upon the point of insanity related to responsibility under the law. To be able to distinguish between the born criminal with abnormalities of structure and psychic disturbances, and the insane criminal, is sometimes a difficult thing to do, and I can not agree with those who deem it an easy matter to decide, so intimately mixed are the inherent tendencies and anomalous conditions present in the two types; so frequently the same conditions are manifested in both that it is sometimes very difficult but not necessarily impossible.

Garofalo's distinction is a good one, and is applicable to a large number of cases. He makes the distinction, "with the insane criminals, that in the act itself lies the satisfaction, not the object, while with criminals the act is only a means to an end." To the former crime is a pleasure, to the latter a paying business necessitating, it may be, diagreeable acts.

Criminals of unsound mind can not all be classed in the same category if we are to study them intelligently; indeed, it is difficult to make a classification which is always distinctive.

For my own convenience I subdivide insane criminals into five classes:

1. The paranoiac, who are persons exhibiting self exaltation, systematized progressive delusions, writers of insane political documents, and with tendencies toward political homicides which are usually consistent with their delusions. Guiteau and Prendergast are good examples of this class.

2. The psychic epileptic. A class not numerous and who commit the unexplainable murders. This class of criminals commit outrageous murders during epileptic seizure, and which seems utterly inconsistent with the circumstances and the perpetrator, and can not be judged by the ordinary psychology of criminals. (Ferri.)

3. The phrenasthenic or psychopathic criminal, who is one of irresistible impulse, feebleness of will, and with morbid tendencies to private murder. This class of criminals commit atrocious crimes, apparently without motive and purely from the force of impulse, or from the satisfaction of the criminal act itself. Good examples of this class are Jack the Ripper and Mrs. Halliday.

4. The morally insane or reasoning phrenasthenic. The only difference between the morally insane or reasoning phrenasthenic is the absence of delusions, and their perversions are of the sentiments and affections. (Regis.) "They represent a small class and are the individuals who apparently with full reason and judgment commit themselves in an unconscious and frequently paroxysmal manner to indulge in errors of conduct and immoral acts which are really pathologic, and although apparently less insane they are more profoundly degenerate than the delusion cases, and have a more marked degree of mental infirmity and imbecility."

The fifth class of insane criminals "consists of a large body of persons tainted by a common and clinic form of mental alienation, all of whom are apt to become criminal. This class of insane criminal are sometimes identical, and sometimes opposed to the born and occasional criminal." (Ferri.) This class commit various crimes under insane impulses and are commonly degenerates. It is seldom that a criminal of this class commits an atrocious crime unless under an impulse of passion.

These classifications are more a matter of convenience and should not be arbitrary; practically, the whole importance of the determination of the criminal insanity or sanity devolves upon the question of responsibility, and classification is only useful in arriving at correct conclusions as to the individual's responsibility under the law.

The Born Criminal.—The born or instinctive criminal is one who most frequently presents anomalies of organization and psychic aberration; they are criminals the same as other men are mechanics or artizans, and look upon the penalties of crime as the natural risk incidental to the business; who do not regard a crime from its moral aspects, but simply from the risks attendant upon its execution. The born criminal as a rule is deficient in both moral and physical sensibility. This criminal insensibility is manifested in his perfect inability to see the evil side of a criminal act, and to forecast its effect upon himself as a moral entity; also in his indifference to consequences and to feelings of remorse. He plans and executes with the whole moral code left out, only as it is used to escape the penalty which may deprive him of the exercise of his craft.

The lack of physical sensibility is often marked.

[3] The time will no doubt shortly come when hypnotic suggestion and the use of special instruments for the measurement of brain impulses, as related to physical conditions, will be added to the physician's armamentarium.

My attention was first called to it particularly while doing operations upon this class of men, they exhibiting no evidence of pain even though the operation might be painful and to the normal person excruciating. One man attempted to castrate himself and when discovered had succeeded in exposing the testicle, having opened the scrotum throughout, and was about to cut the cord. This same man under a previous operation for ligation of the radial artery had shown almost perfect insensibility to pain. Another case was that of a man about 30 years of age, in good health, classed as an ordinary convict, quite inoffensive, but who was drawn into an altercation with a fellow workman in the repair shop, and who in a fit of rage walked deliberately across the shop to a small circular saw, threw on the belt, and without hesitancy placed his forearm upon the carriage and sawed it completely off just below the elbow joint. He seemed perfectly indifferent to the whole affair and to suffer no pain. He was discharged from prison, was again incarcerated, is now serving a second term and is still considered an ordinary convict. Numbers burn themselves in a most horrible manner to get rid of doing a moderate task, cut off their fingers and mutilate and injure themselves in different ways to carry a point, not because they could endure pain heroically, but simply because they had learned that these things did not hurt them overmuch. This insensibility to pain tends to rapid healing of their wounds. There is, however, one erotic type of born criminal who is over-sensitive to all sorts of pain and suffers exaggeratedly from the slightest injury. This moral and physical insensibility at once places the possessor in a low order of organization and one largely incapable of reformation or improvement. From this class will always come the major portion of incorrigibles.

The Occasional Criminal.—The occasional criminal presents rarely marked anomalies of structure such as characterize the born criminal. This type are more criminals from environment and circumstances, and do not present those anomalous conditions that bring them properly within the province of a medical study; they are therefore best left to the sociologist, only in so far as individual cases present psychic and physical diseases requiring medical treatment.

The Criminal of Passion.—The criminal of passion is one of irresistible impulses, who under the stress of uncontrollable passion commits crime of which there has been no premeditation, and for which he suffers the keenest remorse. "He is usually strong enough to resist ordinary temptations, but does not resist psychologic storms which are sometimes actually irresistible." They are of highly neurotic type, and their study is of interest and consequence to the physician in that they approximate criminals of unsound mind, and it is often a question to determine as to the sanity of their acts. They are not criminals in the true sense, but rather offenders, victims of their own impulses.

We come now to consider the physician's relation to the criminal as regards his treatment. The complete study and treatment of the criminal must ever be largely a sociologic one. As has been said by Lacassagne: "The criminal is a microbe inseparable from his culture broth, the social surrounding." And gradually but surely the purely anthropologic study of the criminal has given place to a plainly more sociologic one based upon it.

The treatment of acquired and intercurrent disease of the criminal falls almost entirely within the field of labor of the physician to penal institutions, and should embrace in its operations all of the medical, surgical, mechanical and therapeutic means at the disposal of the physician. In the treatment of heart lesions so numerous among criminals, both gymnastic exercise and proper medicaments should be used.

For syphilis, constant specific medicaments and operative procedures should be used, and the same in meningeal lesions. Tuberculosis: rigid isolation, with the destruction of the bacilli by every modern means, and climatic influence should be a part of the treatment. The various manifestations of psychic disorders and abnormalities should receive generous treatment by means of spray baths, surgical shock and electricity. At Clinton Prison, New York, all these therapeutic means are in active operation with beneficial and successful results. Aside from the treatment of the physical ills mentioned, it is with the insane, the born and weak-minded criminal that the physician will have the most to do in the treatment of psychic disorders and the development in him of the power to control brain impulses.

The treatment of the insane criminal falls entirely within the sphere of the State Hospital for the Insane. The chief office of the physician with reference to the insane criminal is his classification and isolation. This function as now exercised is chiefly directed toward the examination of the criminal when accused of crime, and is a medico-legal one, and one which is not to the credit of our profession, which I set forth in a paper read before the Medical Society of the State of New York in February, 1895: "Shall Insane Criminals be Imprisoned or Put to Death?"

I am pleased to be able to state that there is a good prospect of remedial legislation in my own State regarding the exhibition of medical expert testimony in all criminal trials.

It is not, however, so important to the protection of society that the insane criminal receive just and equitable treatment in courts of justice, as it is that he be apprehended before he is able to accomplish the execution of his delusional impulses. It is the apprehension and detention alone that can protect society from their depredations. Had Guiteau and Prendergast been apprehended, both Garfield and Mayor Harrison might still have been alive.

We should urge the passage of such laws as would tend to place some competent medical officer in every community as having the right of surveillance with reference to this type of mankind.

In the treatment of the born and habitual criminal, the first object should be to increase inhibitory power. The will may be said to be the gateway of the mind, and through its narrow portals pass impulses for good or evil, wise or foolish, and it is the exercise of this faculty that must control the tide of psychic impulses that seek to find passage to the outer world. Since inhibitory power is the essential factor, the cultivation and strengthening of this power should be one of the chief objects of treatment in the weak-minded and degenerate criminal, the exercise of certain brain functions over and over again constitute a habit of action which becomes routine and natural. If the will is to be strengthened and habit broken, new tracks of association fibers must be brought into play, dormant brain cells stimulated into activity and the whole current of thought and cerebration revolution-

ized. This can only be accomplished by some sudden shock, either physical or mental.

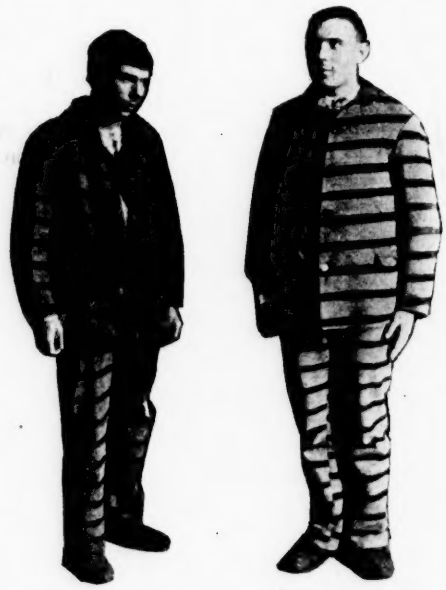
It is a well-known physiologic law that by severe mechanic shock we can suspend the function of cell groups, partially or entirely. It was to this principle of shock that were due many beneficent effects from the use of the more primitive forms of physical punishment in corrective institutions. It is a well-recognized fact by penologists that the shock attendant upon corporeal punishment has often resulted in the cure of certain psychoses. Many a man has been converted from an intractable crank on the border line of insanity into a tractable and useful one.

I find this view is substantiated by the figures relative to the commitment of insane convicts to the State Hospital for Insane convicts, which, prior to the abolition of corporeal punishment in the prisons of the State of New York showed .00874 per cent. and since its abolition up to the present year .01764 per cent., or more than double the former percentage. While these figures can not be relied on as alone affected by this change, they are sufficiently indicative of the relation existing between the two, since apparently the contributing circumstances would rather tend to lessen the number of commitments than to increase them. I am not using these figures for the advocacy of corporeal punishment, but simply to show the influence of shock in preventing mental disease. In the application of all the forms of shock the effects are produced by the pedagogic impression made upon the brain, which in the class of criminals under consideration is always weak and incompetent, and whose brain cells respond more readily to stimuli applied through physical sensation.

In a paper read before the Medical Society of the State of New York upon craniotomy in idiocy, in January, 1895, Dr. Charles L. Dana attributes the benefits derived from operations upon the skull for this condition as due chiefly to what he terms "Surgico-pedagogic influences." My own experience has substantiated this view with reference to weak-minded and degenerate criminals. My attention was first called to this in observing that in certain cases where criminals had been severely handled in fights, and where the shock was considerable, and especially when associated with extensive scalp wounds, that these men usually became more tractable afterward and evinced marked changes in many ways during the remainder of their incarceration.

In several of these cases there was an almost complete turn about in the disposition and psychic condition. This led me to investigate, and I found that by freely cutting through the scalp down to the bone, and raising the periosteum, still greater improvement followed. I have now begun a series of operations upon neurasthenics and weak-minded criminals. April 1, of this year I operated upon a young man, aged 22 years, serving a first term in State prison. Operation for relief of neurasthenia and excessive masturbation. Patient was extremely nervous, sleepless, despondent and apparently becoming demented. The hair was closely shaven, and under antiseptic precautions the operation was performed as follows: Two horse-shoe incisions were made five inches in length, one on the right and one on the left side of head, one and one-half inches from the median line at the apex of the cranial arch. The periosteum was cut cleanly through, and separated from the bone for a distance of about one inch all round the incision; grooves were then cut in the bone, but no bone removed; the wound was packed with iodoform gauze and dressed ordinarily. The wounds were then packed loosely until they healed by granulation. No sutures were put in. The effects of this operation were like magic, the young man improved in every particular, slept well; appetite improved; figure became erect, took on flesh rapidly; circulation improved, and his whole aspect was very much more vigorous. The habit of masturbation was entirely relieved. I show you photographs of the young man before and fifteen days after the operation. Prior to this I had circumcised him, and used all other means at my disposal to effect the cure of his habit with negative results. (This operation is also beneficial in meningeal inflammations, and also with thickened and adherent scalp areas.) This principle has for a long time been recognized in isolated and incidental ways, but never to my knowledge has it been understood thoroughly or applied in any systematic manner.

Here is a wide field for study and experiment, and I believe that much can be accomplished in the treatment of this class of criminals by the application of some form of shock. I am contemplating the construction of an electrical apparatus, which will produce the maximum amount of shock and physical impression with a minimum risk of injury. Any means by which powerful influences can be brought to bear upon the subject will offer the best and most favorable opportunity for improving the patients.



Before operation. After operation.

J. R., AGED 22.

The treatment of the occasional criminal, and the criminal of passion does not require special enumeration.

The application of scientific principles of classification and treatment of the criminal consideredfrom a sociologic standpoint, is one fraught with difficulty and we need not flatter ourselves that apparent good results will come quickly or that the way is easy; the duty is plain however and we must walk therein. It has ceased to be a matter of choice and we must be equal to the responsibilities which this new field of action enforces. Already in the half century of its life, the science of criminal anthropology has recorded brilliant achieve-

ments in the accumulation of invaluable data and the elucidation of many valuable truths. These achievements have come largely through the labor of medical men; therefore the soundness and efficacy of this relation of physician to the scientific treatment of the criminal can not be doubted, nor that it falls properly within the medical province, for if we interpret aright the significance of the astonishing developments of our time and note correctly the movement of modern medical thought and action, we shall come quickly to the conclusion that the field of medical work and practice is rapidly widening and that its mission can no longer be so entirely restricted to the narrow limits of the treatment and cure of disease, but more to its diagnosis and prevention, and its future accomplishments must comprehend much more that appertains to the safety and welfare of the people. Through the gateway of laboratory work in our own profession, and the investigations of the correlative sciences, a great flood of light has come; old systems are breaking up, relations are changing, new adjustments are in order, the X rays alone is likely to revolutionize the whole rationale of diagnostic, prognostic and operative procedure. He who shapes his course by the experience of the past alone will soon find himself deprived of the needful appreciation of an enlightened public. The profession must take to itself larger spheres of action, must extend its powers, must put itself in harmony with new conditions; its relation to society and the community at large must be better understood. The physician is to become a mentor to the people, and his efforts like those of his time must look to the improvement of mankind, not in the concoction of monstrous formulas, or in the combination of nauseous decoctions, but in his knowledge of the causation and the exercise of his powers in the prevention of disease and the general guardianship of the home, the individual and the public. So far as this function has been exercised it has accomplished much good and has been of incalculable benefit to society at large; in the protection of our shores from pestilence, our municipalities from infectious diseases and the securing of abundant opportunities of healthful living the labors of our profession have been untiring, fruitful and reassuring.

The opening of this new field of criminal anthropology and sociology, embracing the type study of man, and the resolving of society into its respective classes offers equal opportunity for the exercise of high and noble powers.

It is only through the exercise of such a prerogative that the physician can sustain the position in which the evolutional processes of scientific progress have allotted to him, and he will only rise equal to the dignity of this requisition when he shall have assumed the rôle of a competent student of the bio-psychic principles and elements which enter into the different types of criminal man, and society be enabled to protect itself against crime; a protection too long and entirely entrusted to the offices of the penal code.

DISCUSSION ON PAPERS OF DRS. CORR AND RANSOM.

Dr. D. R. Brower—In Illinois, our State Society and our various local societies have, during the past two or three years, had this question before them on various occasions, and what is true of the State of Illinois is true of many of the other States. The question of crime is not a legal question; it was until twenty-five or thirty, or possibly forty years ago, a purely legal question, and to-day in its practical application it is a purely legal question; but in reality it is a medico-legal question; and, as a consequence of the utter failure of the law and the church to stay this criminal procession, we have the results, the vast, marvelous, everwhelming increase of crime. The only thing that can possibly stay this great increase is for the medical profession to step to the front and teach the intelligent laity that the care of the criminal is as much a medical as a legal question. There are some things that study of this question has satisfied me as being established: 1, the increase of crime; 2, we state as the cause of this increase of crime a vicious parentage, bad environment, alcoholism, a constant increase in the urban population and last, though not least, the unreasonable manner in which the laws are administered; 3, that the habitual criminal is an abnormal man, which is shown physically by asymmetry in cranial cerebral development and in physiognomy, as well as by anomalies, in physical sensibilities and in motor activites. One of these anomalies does not make a criminal man, but in the habitual criminal these abnormalities are present in a vastly greater amount than in any other person in the community. There are psychic abnormalities manifested by a moral sensibility. This is most manifest and almost universal; not limited to the moral criminals, but prevailing throughout the whole great class, leaving out the few who are classified under the occasional and passionate criminals. There is a lack of forethought with them; they live simply in to-day. And there is a low grade of intelligence, a prodigious amount of vanity, and an emotional instability. The practical part, upon which the laity must be intelligently educated, is what to do with them—how to treat them. The question is a medico-legal one, and the doctors must come to the assistance of the church and the law. The social and biologic condition of the person, and not the accident of crime, should determine the degree and kind of punishment. As our laws are adminstered to-day, if the theft is a trifling one, the punishment is but slight; if the amount taken is a large sum, the punishment is accordingly great. The reference is not to the criminal, but to his crime, whereas the crime is a mere incident, as the theft was $5 because there was not $5,000 to steal. The measures that are to counteract crime must be, not according to the crime itself, but to the condition of the criminal.

In my studies of this question in the institutions of my own State I found a woman who had been sentenced to our Bridewell thirty times. She should have been sentenced but once, and the county of Cook would have been saved the expense of twenty-nine arrests, trials and imprisonments, while the community round about her would have been saved a great deal of perplexity and considerable destruction of property. She had upon her, as plainly marked as any habitual criminal ever had, the physical and psychic stigmata of degeneration.

It is this unreasonable administration of our laws that has probably more to do than anything else with this marked increase in crime. I would like very much, if it is practicable, to have attached to every court some person who is skilled in criminal anthropology who can aid the court in determining what the sentence shall be. The rule that has been adopted in some of the courts of Illinois so far as the reformitory institutions are concerned, has been that of indeterminate sentences, and consider this is a much better plan. If the indeterminate sentence should be applied to all criminals, and the investigation of the anthropologic condition of the criminal made in the institution to which he is consigned, vastly more beneficial results would follow than by his investigation during the trial.

It is by indeterminate sentences that I think the matter can best be settled. The only trouble in the State of Illinois, so far as the reformatories are concerned, is that the maximum limit is not enough in every instance. In the next place a very serious interference with the suppression of crime is placing the pardoning power in the hands of the governor. It should rather be placed in the hands of a commission skilled in the subject of criminal anthropology.

The plan of disposing of these criminals just before and during the trial is a mistake. These supposed criminals are sent to a common jail and the associations of that jail are vile, and the man who has not yet been declared a criminal by the law is there thrown into contact with confirmed criminals. This is very wrong. There should be established in every community detention places where there can be a separation and isolation of these criminals awaiting trials; and then, when the sentence comes, there should be three classes of institutions to which these people are consigned: A reform school for the juveniles; reformatories for the curables, and penitentiaries for the incurables.

Some of our laity think that this medical disturbance in the matter of crime is for the purpose of relieving criminals of the penalties of crime. Such is not the case. First to protect the community; first to see to it that these criminals, once arrested, should be kept in custody until they are cured; that is the most important point.

It is only through such societies as this, through medical men and women, that the laity can be educated up to a proper appreciation of this great question. We are going through now precisely what was gone through at the beginning of the century, or a little before, in the matter of insanity, when that was divorced from the custody of the church and the law.

We are to-day pupils in this work of reformation, and very soon the same results will be accomplished with reference to the care, treatment and the cure of these criminals—probably not to the same extent, but similar results will follow as have been seen in the care and the cure of insanity.

DR. JOHN PUNTON—There is no doubt that there is a great lack on the part of both the medical and the legal professions in failing to handle these cases properly. These changes which are proposed, however, would mean an entire subversion of the constitution of many of the States of the Union; in other words, the present status of the legal adjustments of crime would be undermined and that is a very large matter for the medical profession to undertake to do. I am in the main in favor of the reforms outlined, and just in proportion as we agitate this matter we are aiding not only the legal profession but also the community in which we live.

DR. CAMPBELL—That law and the church have failed to repress crime is well known; it is now proposed that we of the medical profession shall take hold of it. The alarming increase in crime is known to us. But I do not entertain any sanguine anticipations of the doctors doing much more than the church and the law have done, if so much. This great increase of crime can not be attributed to the causes that have been assigned to it, so far as I have heard here to-night. We have always had bad education, syphilis, alcohol, bad inheritance and bad environment. In my opinion this great increase of the criminal class is owing to the advance of our civilization; the increase in the species; the growing stress that has been brought to bear upon the means of gaining a livelihood. These forces are irresistible. They will continue, and crime as the result of them will continue; and if all these admirable suggestions are carried out, I doubt if 5 per cent. of the crime will be stopped.

DR. POWELL—I think the commission of experienced men would be a very desirable thing to have.

DR. QUINBY—If we study the results of imprisonment, we see the victim, instead of being benefited by punishment, made worse by it. This is due to the method and management of our criminal jurisprudence. A young man who was well disposed, whose environments were correct, whose education was proper, whose bringing up was right, but who became involved through alcoholism, was thrown among the class of hardened criminals when arrested, and from that hour, he was kept there six months for some slight offense, he has become a degenerate man. He told me that his barbarous treatment during his confinement is what sent him downward. Now, could that man have been arrested and treated somewhere instead of being thrown into prison; if we could have institutions for treatment, not simply for imprisonment, the results would be different.

These are all abnormal cases. They are sick, and how do we treat them—as mentally and physically defective? No. Cruelly, inhumanely, putting them with criminals, into the charge oftentimes of men who are themselves brutes.

The criminal classes in this country are largely increasing, and something must be done to stop this increase. The church is not in a condition to do it, because these individuals are sick people, defective physically and mentally, the power of alcohol always having a tendency to destroy will power; hence the physician is the proper man to give advice.

DR. BISHOP—We feel a little sensitive when the preacher and the public blame us about things, and we are in the same position exactly when we blame the church and the community. We are part of the church, or should be, we are part of the community, and as citizens we are responsible. There is a great deal of hypersensitiveness on the part of our good friends who believe that these criminals as a rule are defective. It seems to me that very often they are liars.

I think a slight change in the law would be of advantage; on the basis of sentencing to prison for a determinate period, and if at the end of that time they were not cured, and still unfit for freedom, to keep them in prison for an indefinite period until they showed that they were fit to be released.

It is an outrage to send men to prison and have them resort to all sort of crime that it is possible to do inside those walls, and then set them loose on the world at the end of the time for which they were sentenced. The mistake is that they are not made to feel that they can gain something by improving.

There is no question that men are morally deficient as they are mentally and physically lacking, and the proper place to treat them is in some school for development.

DR. CORR—The question is how to prevent crime, how to prevent the young person who starts out with a small degree of tendency from cultivating that tendency and from becoming a criminal. We must improve our society so that we do not have any of that class born. Dr. Ransom has classified crime very finely, but we want a classification which shall tell us how to prevent it. Now, if it be true that the conduct of people is guided and inhibited by the moral sense and that is a faculty of the human mind that is capable of cultivation, I ask you to formulate some plan by which this end can be accomplished.

THE PSYCHOLOGY OF NARCOTISM.

Read in the Section on Neurology and Medical Jurisprudence at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY W. XAVIER SUDDUTH, A.M., M.D.

CHICAGO, ILL.

Nature intended that man should be a comfortable animal and enjoy to the full the fruits of his labor.

Man has ordered otherwise, and as a consequence in the receding days of the nineteenth century, when art and intellect have reached their highest development, we find man, born to be the favored creature of nature, laboring under self-imposed burdens of society, oftentimes heavier than he can bear. As a natural consequence of his pernicious environment he is frequently found seeking surcease from the pains of existence in self-immolation, temporary intoxication or suicide, the method adopted depending much upon his belief in a future state and his relation thereto.

What are some of the steps that have operated to bring about these deplorable conditions? They can not be laid to natural causes because there has

never been a time in the history of civilization when the actual needs of man were to be satisfied with as little expenditure of vital force as at present. The cause of the stress of the age must therefore be looked for, not in the physical, but in the psychic domain of man's nature, and it is to this phase of the question that I desire to call your attention to-day.

In that degree that man is able to perform the necessary duties of life by force of habit so does he lessen the labor of existence. The hardest work man has to do in this world is to think. Every psychosis has its neurosis. New experiences or acts are successfully mastered only by the expenditure of thought. The greater part of the absolutely necessary acts of existence are performed by rote rather than by thought. Thought labor requires nerve action, just as surely as locomotion incurs muscular activity; and while it is true that there is a marked physical difference between mental and muscular action, yet physiologically considered they both express a condition of catabolism that has to be met by metabolism. Ordinary cell wear is not necessarily painful. On the other hand, a certain degree of pleasurable exhileration accompanies most necessary bodily functional activity. When, however, exercise is carried beyond a certain point, so as to become forced, it soon becomes painful. When weariness ensues as a consequence of functional activity, pleasure ceases and pain begins. Pain is the absence of pleasure according to our major premise laid down in the opening sentences of this paper, and if this be true, then its abolishment does not consist in self-immolation, but in a readjustment of our relation to our environment or its more or less complete reconstruction.

Pain and pleasure are not distinct physical conditions, no matter how intimately they may appear to be related, but mental states, and therefore require careful consideration to differentiate them. Pleasure and pain are often so closely connected that it is with difficulty that they can be separated. Not only this but the terminology used to express the two conditions is inextricably confused. Many people are said to "cry for joy." In fact, so narrow is the division line between the two conditions that the scale turns upon the mental state of the individual at the time of experiencing any particular sensation, as to whether he suffer pain or feel pleasure. The close relationship between them is thus shown by a case in which the one merges into other. Continuous stimulation that at first gives pleasure, in time becomes painful. This leads to the conclusion that only a certain amount of pleasure is bearable by human nature, if furnished without intermission. The system may be surfeited by pleasure as well as borne down by pain. But what is it that suffers? Surely not the physical that alone experiences wear. No! Pleasure and pain are not conditions *per se*, but mental perceptions of sensations experienced at the time or revived from some previous experience, through thought images brought before the mind by association of ideas. Then again, not only does pleasure easily merge into pain but the very absence of pain, to him who has suffered, is a pleasure. The fullest appreciation of the pleasures of existence are to be had by comparison with painful experiences happily passed. While many of our joys and sorrows are the result of purely physical sensations, yet a considerable proportion of our pleasures and pains are intimately associated with our emotions and are distinctly dependent upon the peculiar physical condition in which the experience finds us. Many of the acutest pains of existence are those of restriction. Man longs to be free, to cast off the burdens of care, for even a short space of time, to secure a respite from the pains of existence—to lose himself; hence his resort to the use of narcotics. Sad delusion! The greatest slave of all is he who seeks his freedom in these deceptive agents. Nine out of ten narcomaniacs will tell you the some story, when asked as to how the habit was formed. "I took it to relieve pain," "to drive dull care away," "to get a little rest," and thus the chains of habit were forged.

Dr. Carpenter says, "that our nervous system grows to the modes in which it has been exercised." That is only another way of putting the fact that we develop along the lines of least resistence, according to the bent of our special inclinations, limited and modified by our peculiar environment. Habits are more easily formed in youth than later in life, by reason of the fact that the organism is in the formative stage and the inhibitive feature of the will is less developed than it is later on. If a young man or woman reaches the age of twenty without having acquired any vicious habits of thought, action or appetite, ten to one they will go through life free from contamination. Nevertheless, physical states of weakness later in life seem to unman the individual and reëstablish, to a greater or less extent, the conditions prevailing in adolescence. Drugs that may be given during the crisis of a disease with impunity, if continued during convalescence are apt to give rise to drug habits, hence the necessity of discontinuing the use of stimulants and narcotics during this stage of the disease and depending upon a nutritious diet and natural remedies to bridge over this critical period when the will is weakened and the moral faculties seem to be more or less clouded.

Narcomaniacs may, for convenience of study, be divided into three classes:

1. Those who have acquired the habit through hereditary tendencies, and who find in the use of narcotics a physical pleasure.

2. Those who, though physically strong, yet are led into the habit by social customs as the result of environment.

3. Those who turn to narcotics for relief of the pains of existence.

The psychologic bearing of the several classes is essentially different when laboring under the spell of the drug. Members of the first class have, in most instances, the warning example of degenerate ancestors; yet so great is the demand of the system for sedation that they brave the dangers and public opinion with a brazen effrontery that is many times astonishing. They have no desire to reform and their course is continuously, progressively downward. With them there is no shadow of turning. They are wholly given over to evil ways and the sooner they end their days the better for themselves and mankind at large.

The second class, considerably larger than the first, much larger in some countries than others, suffers mostly from the direct effect of the drug because removed from the moral stigma under which other classes labor. While its members are seriously handicapped in the battle of life, yet they manage to preserve a tolerable existence, unless the particular narcotic used happens to be hasheesh or opium, and even against the latter the natives of India seem to hold a more or less charmed existence.

It is to the third class, however, that I desire to call special attention, because they are those who dwell among us: Our fathers, mothers, brothers, sisters and friends. Brought to their condition of enslavement, many times by circumstances over which they have no control, held accountable by an highly intellectual and moral civilization, they suffer, not only from the direct effect of the drug used, but from the goadings of an outraged moral nature. The members of this class, oftentimes forge their chains through years of petty indulgence in the use of the milder sedatives and narcotics. Their case then is one of slow growth and needs to be studied from that standpoint. A diseased condition of the will is established, in which the individual finds himself unable to stand out against what he knows to be sin against the physical body. It was not always so; there were times when, in the early history of the case, had he had the right kind of treatment, he could have broken the bonds of the growing habit with comparative ease. These diseased conditions of the will form most interesting psychologic studies and promise to throw much light upon the rationale of treatment. In the main, an entirely erroneous idea of the function of the will prevails. Most persons consider it as a direct motor force only, confusing it with volition, which is the act of the will, and thus overlook entirely its inhibitive aspect. In one sense the will may be said to be dual; but in any event it represents a state of the mind, and is, according to James, "a memory of past acts." Its parents are desire and feeling and its offspring are represented in such mental states as "I wish," "I will" and "I will not," which latter is many times synonymous with "I can not."

In order that feeling and desire may become motor impulses, they must be accompanied by a knowledge of the attainability of the object desired, otherwise a futile or even no effort is made to attain the object desired. We thus observe the difference between "I wish" and "I will" and note that faith is one of the principal attributes of a strong will. The inhibitive aspect of the will which enables its possessor to say no is largely a matter of education. Uncivilized man knows no master, save want, and when opportunity for indulgence offers, gives full reign to his unhallowed passions. The tendency of civilization is to teach the control of the passions through the limitations of environment. Man thus learns to inhibit his desires and hold in check his feelings through the inhibitory action of his will. He is thereby enabled to contain himself within the bounds of decorum and decency. It is by will power that man is an abstemious animal and when given over to indulgence he is simply evidencing the atavistic principle which so often crops out during the evolutionary process. Civilization teaches man to "wish" and to "wait" for many things in this life, upheld by the hope of their fulfillment in some future existence, if not in this, and also that by restraining his passions and appetite he is serving his own best good.

Continued indulgence in the use of narcotics finally creates an appetite. Like a bad debtor, they promise much and pay little. The system continually cries out for relief that comes not. This irresistible craving is intensified by moral or physical restraint and the habitué is urged on by his vitiated appetite to greater and greater indulgence when opportunity offers. No feat is considered too dangerous to be attempted to secure the coveted dram; no human tie too sacred to prevent the fulfillment of his unhallowed desire, even hope of future salvation is freely given up for the cup that cheereth but to damn. The intensity of the passion for narcotics when once the habit has taken hold upon its victim, points only too plainly to something essentially different from a mere physical appetite. Hunger for food, even unto starvation, shows no comparison in its suffering to the agony of the alcoholic inebriate or the opium fiend when deprived of his wanted potion. Everything points to a diseased mental state beyond the power of any drug to reach it as an *antidote*. While drugs play an important role as alteratives and tonics in the treatment of inebriety yet there is not a "cure" in existence, that has any efficacy, that does not base its permanency upon the "suggestive" methods employed in effecting the cure. While it is true that some depend almost entirely upon "drug suggestion" yet the cures that promise most in permanency of results have incorporated in them a system of psycho-physics, using the term medically, that is successful in proportion as it is scientific and comprehensive.

Inebriety, in all its forms, is beyond question a neurosis and permanency of cure depends upon establishing an absolutely altered mental state, together with the maintenance of a healthy environment until such time as the individual has fully regained possession of his will, and developed sufficient moral stamina to withstand the temptations of the open saloon and social life.

100 State Street.

FEIGNED INSANITY; REPORT OF THREE CASES.

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY WILLIAM FRANCIS DREWRY, M.D.

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The simulation of insanity is not an innovation peculiar to modern day schemers, though it is now frequently resorted to by designing criminals.

In the sacred writings is recorded that the Shepherd King of Israel "changed his behavior and feigned himself mad and scrabbled on the doors of the gate, and let his spittle fall down upon his beard," because he was "sore afraid of the king of Gath."

In order to escape the Trojan war, Ulysses feigned insanity by plowing the sea-shore and sowing salt instead of corn. And Lucius Junius Brutus, it is said, played the imbecile for a purpose.

To detect simulation and to establish the requisite proof of it, have at all times been matters of more or less difficulty. Casper met with many cases of the sort and appreciated the difficulties which they presented. Says Hammond: "No one, no matter how skillful an alienist he may be, is beyond the point of being imposed upon for a short time by persons assuming to have certain forms of mental derangement." Snell remarks that if a simulator preserves a complete passiveness and an obstinate silence, it is not impossible that insanity may be so perfectly simulated that detection may not be accomplished. Conolly Norman regards the question of simulation of insanity as "one of the most difficult with which alienists have to deal, one requiring much experience, acumen and sagacity, if a satisfactory decision is to be arrived at."

In his work on "Sanity and Insanity," Mercier says: "There is no form of insanity that may not be simulated by a case of drunkenness; and when it is not known, from other sources of information, that these manifestations are due to drink, no expert in the world, however skillful, could distinguish between the insanity that is due to alcoholic poisoning, and the insanity that is due to other causes."

Tardieu and others think, however, that nothing is more difficult to counterfeit than mental disease and that the attempt to deceive may be easily discovered by a careful observer. Conolly asserts that he can "hardly imagine a case which would be proof against an efficient system of observation."

When we remember that, besides the fact that scores of criminals resort to the insanity dodge to escape merited punishment, the truly insane sometimes simulate insanity, that simulation itself may be an indication of mental alienation, and that occasionally there is a tendency of feigned insanity after long duration to become real insanity, the question of accurate diagnosis may not always be unattended with uncertainty and embarrassment. To an experienced alienist there will of course seldom be any great difficulty in arriving at a correct conclusion, but to one with more or less limited knowledge of the various manifestations of mental diseases, a clever imposter, with the faculty of imitation well developed, would appear somewhat in the nature of a psychic problem.

At all events, before giving a positive answer to so delicate and important a question as whether one is insane and therefore entitled to all possible humane consideration, or sane, and consequently responsible for his illegal acts, a physician should study methodically and scientifically the suspected case, keeping his conscience pure and undefiled under all circumstances. "His opinion," says an eminent authority, "should be founded upon the conception of pure knowledge, based upon observation and induction."

The question of disease—that and nothing more—is the one for the physician to determine. Is the person whose legal or testamentary responsibility is in doubt, *insane*—is his mind affected by *disease?* That is the problem the solution of which devolves upon the physician. Says Bucknill: "The element of disease in abnormal conditions of mind is the touchstone of irresponsibility and the detection of its existence or non-existence is the peculiar and oftentimes the difficult task of the psychologist."

So, view the matter in any way you will, it can be only a question of diagnosis.

Case 1.—In February, 1895, Isaiah P. was indicted on the charge of house-breaking and larceny. While in jail awaiting his trial in the hustings court of a Virginia city, he suddenly began acting so strangely that doubt was entertained regarding his mental condition. Upon being arraigned in court his behavior was so utterly at variance with that of an ordinary sane man, he was remanded to jail and the trial of his case postponed, so that his mental condition might be investigated.

The writer was appointed by the judge to ascertain whether or not the prisoner was insane. Whereupon I visited him several times, dealt with him not in the rôle of a secret detective, but in that of an impartial physician, and as such proceeded systematically to inform myself as fully as possible of his history and symptoms.

History and heredity.—Isaiah was born in 1857, of negro parentage. There was nothing of special interest connected with his early life. From childhood he was a bad, indolent fellow. Only two of his family were ever afflicted with any form of neurosis or of psychosis. His mother, at 65, was sent to an asylum in a state of senile dementia. A younger sister died of phthisis pulmonalis, complicated with melancholia, while in a hospital.

During a spree some ten years ago (1886, I think), Isaiah received a blow on the right side of his head which produced a depressed fracture, but under careful surgical treatment he made a complete recovery, the only visible result remaining being a slight depression in the cranium. On more than one occasion he was suspected of larceny, and finally, in 1888, was convicted and sentenced to five years in the State penitentiary.

It was claimed by his family that he had had, since the blow on the head, several epileptic fits and been at times "curious in his ways." But in the absence of corroborative evidence these statements were accepted with a degree of reserve.

Appearance and symptoms.—A careful physical examination revealed nothing of special pathologic import. His bodily condition was about normal.

He came into my presence with an air of exaggerated excitement, moved about restlessly, took no notice of his surroundings, looked wild and uneasy, talked incessantly and foolishly. The almost exclusive subject of his foolish, incoherent gibberish was "locusts." He talked about locusts most of the time, but when questioned he gave answers foreign to the subject of his apparent or assumed delusion, saying he did not understand what I meant. All questions were answered very slowly and hesitatingly. When I told him my business his incoherence and restlessness became intensified. When unobserved he became quiet and composed.

Odd sensations in his head were frequently complained of. He would put his hand to his head and say something was "scrambling about in here."

Memory and intelligence, to all appearances, were absolutely lost. Apparently he recalled nothing that had ever happened, nor did he remember any person or place he had ever seen. He could not or would not distinguish one piece of money from another, nor tell a man from a woman.

To every question he gave a negative or an absurd reply. For instance:

Question. Where were you born? Ans. Caught ninety-nine locusts to-day.

Ques. How do you feel to-day? Ans. Eat locusts with butter.

Ques. Let me see your tongue. Ans. Holds up his foot.

Ques. Did you sleep well last night? Ans. Tell him all right. Here they come.

Ques. Tell me about the locusts. Ans. Had bread and shucks for dinner.

Ques. But what of the locusts? Ans. I don't understand you.

Ques. How long has your mind been affected this way? Ans. Some say 49 years; I say 100.

Ques. Have you heard from home lately? Ans. Fell in river last night. The locusts are rolling down the mountains. Let them roll.

He slept well several hours every night, and frequently in day time after he had become very tired from constant exertion and excitement.

I took occasion to remark in an undertone to the jailor, that if the patient were to sing, become noisy at night, destructive to clothing, filthy in his habits, devoid of the sense of pain, my belief in his insanity would be confirmed. A few days later Isaiah had become so noisy and filthy at night that he had to be isolated. He had tried to be wakeful, but, negro-like, he soon fell asleep. His clothes were torn, shoes thrown away, coat reversed, etc. I thrust a needle into his flesh at various points, without making any perceptible impression. Said he did not feel any pain at all. A few minutes later, when a needle was suddenly stuck into his back, he forgot to be insensible to pain and consequently jumped some distance.

My notes show many and various evidences of Isaiah's clumsy effort to "play crazy," but the above is quite sufficient to prove beyond any doubt, *simulation*. I had no trouble in detecting the fraud.

For two months, in fact, until the day he was taken to the penitentiary to serve out a twenty-three years' sentence, he continued his efforts to deceive. Finally, however, he acknowledged the attempted fraud.

In my statement to the court and jury I gave, in substance, the following as the grounds of my opinion:

1. There was no prodromal stage of indisposition, malaise or depression preceding the sudden outbreak. The "attack" occurred in the midst of normal health. He had few symptoms of any form of insanity that might begin somewhat suddenly, viz.: transitory mania, epileptic mania, confusional insanity, acute hallucinatory insanity, alcoholic mania, none of which it is possible to counterfeit. Then, the fixedness of the form of delusion he tried to imitate would exclude any of the above types of insanity.

2. Sudden development of a fixed delusion regarding one particular subject is not consistent with the clinical history of any known form of insanity; for paranoia, monomania or delusional insanity, is of slow and gradual development and unattended with any special excitement, loss of intelligence, etc.

3. If he were trying to appear a paranoiac or monomaniac, he overlooked many essential points; for instance, when questioned regarding his delusion, he invariably gave an answer entirely foreign to the subject; and the peculiarity of expression which so strongly marks that class of cases, was entirely wanting; and, furthermore, there was no excitement or irritability of temper when contradicted.

4. Loss of memory, reason and intelligence would occur in dementia, but the quickness with which he carried out my suggestions regarding the "lacking symptoms" of insanity, to say nothing about his appearance and general shrewdness, would preclude any suspicion of mental decay.

5. Contrary to what is observed in acure mania and other forms of insanity, there was no sign of insomnia. The more intense his restlessness, the more profound the sleep which followed.

6. The hesitancy, extravagance and silliness with which he replied to simple questions; the absurd, disordered ideas which flowed slowly and thoughtfully would not be exhibited in the really insane, whose ideas form and flow rapidly, disconnectedly and are not devoid of sense.

7. There were no physical symptoms upon which to base a diagnosis of either functional or organic disease of the brain. The injury to the head had left no perceptible ill result, motor, sensory or mental.

8. The insanity of his mother being a psychosis of old age, could have but little effect, if any, upon the offspring of her early life. But the fact that she was insane and that she had an insane and phthisical child might be considered, in connection with the possible effects of the blow on the head, sufficient grounds upon which a neurotic diathesis or nervous instability might be based. It is possible that in this case the head injury might have caused some moral deficiency.

9. The order of development and the assumed symptoms failed to conform to the complete clinical picture of any recognized type of mental disease.

10. The motive for feigning was not over-looked, though that was of secondary importance when compared with the history and symptoms of the case.

Case 2.—Another instance of a criminal trying to escape the stern edict of the law by pretending to be insane, has lately come under my personal observation. In this case, however, the ultimate purpose of the malingerer was accomplished.

Isaac H., a negro youth, had served a few months of an eighteen year sentence in the State prison, for murder. He assumed the rôle of a madman, and by taking advantage of the lax and crude method of adjudging one insane in Virginia, he succeeded in gaining admission to the insane asylum where no special arrangements are provided for the custody of insane criminals. Every possible precaution was exercised to prevent his escape; yet Isaac, after a short sojourn, very ingeniously gained his liberty and has never since been heard of. We had diagnosed the case correctly and were contemplating returning the prisoner to his legitimate abode. I have not time here to make an analysis of the case. Suffice it to say, he so far over-acted the part, and behaved so differently from any other case of acute mania—the form of insanity he was trying to counterfeit—the deception was too flagrant.

The history of the case, the clumsy, over-acted symptoms, the motive, were all carefully studied, and by a process of elimination no type of insanity was left to fit his case. In the words of the distinguished Dr. Chapin, of Philadelphia: "The method of arriving at a conclusion is, bring together all the features in the history and manifestations of the case and then decide whether the case corresponds to a type of insanity, which in all of its features could not be simulated except by a trained alienist. In this way a mistake will rarely be made."

Case 3.—Some years ago there was admitted into the Central Hospital a young colored girl, of intelligence above the average of her race, and with a physical formation well-nigh perfect. Her case had been diagnosed "epileptic insanity."

It was some time before I had an opportunity of seeing her "in a fit." From the post-epileptic condition I had serious doubt about the genuineness of the epilepsy. Eventually I saw her repeatedly in her "terrible attacks," as her family had designated the seizures.

She would cry out suddenly, then fall, snap her jaws together, make a noise like the bark of a dog, foam at the mouth and act most maniacally, etc. Then she would pass into a convulsive state, jerk violently, tear off all her clothes, assume the opisthotonos position, grind her teeth, strike and snap at everything in reach, and finally pass into a quiet sleep. These violent attacks would continue sometimes for an hour or two, after which the patient would become quiet and

composed, her only complaint being that she felt sore. Said she knew nothing of the attacks, when they came on or how they affected her, but expressed great mortification on account of her affliction.

I noticed that the fall was rather guarded, that she never bit her tongue or hurt herself in any way, that the sphincters were never relaxed, that the pupils were in every way normal, the iris not insensible to light. It was evident that sensory perception existed. She became bathed in hot perspiration, and seemed to be well nigh exhausted.

The assumed tonic and clonic convulsions were by no means like those seen in real epilepsy. The post-epileptic condition she made no attempt to imitate.

The girl was carefully nursed for some time, but after watching her curious maneuvers a few times, I told her that she was feigning and that the next attack she had I should put her in a room and pay no attention to her whatever. My threat was promptly carried into execution, and the effect was all that could have been desired.

She was soon sent home, got married, though has never had any children, and has ever since remained free from that "epileptic insanity" which she palmed off so successfully on some of her friends for the sole purpose, as far as I could discern, of arousing sympathy. There was, however, doubtless some hysteria in her case.

That there is no established rule or test by which feigned insanity may be detected, but that each case must be decided upon according to the history and symptoms presented, can not be well denied. Alienists everywhere, will bear me out in these assertions. The individual whose sanity or insanity is being questioned should constitute the chief object of the investigation.

Whenever there is doubt about the mental condition of one charged with crime, it would be well, for the court to select a committee of competent alienists to investigate the case and report in writing the result of their examinations and deliberations. This need not preclude a cross-examination.

In Russia and elsewhere methods similar to this prevail. In some of the countries there is, I believe, a regular court physician who decides all doubtful medical cases. It has been advocated in some quarters of this country that there be appointed State experts in insanity to act in all cases where an element of uncertainty exists.

But the best plan, probably, would be to transfer the suspect to an insane asylum and keep him there, under proper safe-guard, for a specified time, in order that the attending physicians may determine the question of real or counterfeited insanity.

For the reason that the position often taken by lawyers is so entirely at variance with the true conception of the disease—insanity—that medical witnesses, who have no special knowledge of insanity, are often called upon to give expert testimony, that physicians are sometimes utilized by shrewd counsel for partisan or for sinister purposes, that juries composed entirely of laymen are not competent to try a case which involves a question of mental alienation—brain disease—and finally, chiefly that the ends of justice and mercy are sometimes thwarted, our system of medical jurisprudence of insanity is in need of revision.

The increase in the membership during the month of September was very sarisfactory. Let the good work go on!

THE ACTION OF STRYCHNIN IN PULMONARY CONSUMPTION IN RELATION TO THE NEUROTIC ORIGIN OF THIS DISEASE.

Read in the Section on Neurology and Medical Jurisprudence, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

BY THOMAS J. MAYS, A.M., M.D.

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Freedom of thought is the foundation of all progress; and while this law develops a diversity of opinion in practical therapeutics so great as to give rise to the belief that no two physicians treat the same disease in the same way, it is nevertheless true that in the struggle to relieve and cure disease we consciously or unconsciously seek and follow methods which finally lead to adoption of the same prinicples if not of the same details of treatment. This unanimity in practice is sometimes reached through certain etiologic and pathologic convictions which we hold of disease; or, as is more often the case, we are driven to it by the power which comes from witnessing the successful effects of well directed medication either in the hands of others or our own, and in spite of any theory we may possess in regard to the origin or mechanism of disease.

For a number of years I have said and written much in favor of the neurotic origin of pulmonary consumption, and while this theory may not be perfect in all its details, I believe that it gives us a more rational explanation of the causes and nature of this disease than any other. Not only do I feel convinced of this, but my experience assures me that the therapeutic measures which are directly addressed to the nervous system are the most effective in the relief and cure of this disease. Led by these considerations I have employed a number of neurotic agents in the treatment of this disease; the principal one is strychnin, to which I shall now devote a few remarks.

Of all the drugs in the materia medica there is none that compares favorably with the action of strychnin in the treatment of pulmonary consumption. As is well known this agent has an elective affinity for the whole nervous system, but over and above this it possesses a special influence on the nerves which preside over the function of respiration. Its action is reputed to be wholly devoted to the motor nervous system, but there is reason for believing that it also affects the peripheral sensory nerves. In small doses it stimulates, in medium doses it tetanizes, and in large doses it paralyzes the nervous system. The dose is a relative or a movable quantity however, for that which produces tetanus or paralysis at one time may act as a stimulus at another.

How, then, does strychnin act in pulmonary consumption? It is taken for granted that the lung disease is merely a superficial manifestation of disorder of the pulmonary nerve supply. Therefore the strychnin primarily raises the tone of the nervous system as a whole, and of the respiratory nerves in particular. In this way it not only increases the resistance of the lung to disease, but it aids digestion, assimilation and blood-building. Let us say that the tone of the nervous system is depressed. By employing strychnin we can do this, but must be careful to avoid the danger point, yet at the same time this point must be approached as closely as is consistent with the safety of the patient. The best way to bring

about this object is to begin with a moderately small dose of the drug, 1-30 grain four times a day, give this for one week, then increase it to 1-24 grain for another week, during the next give 1-20 grain, the following week raise the dose to about 1-16 grain, and so on, making a slight increase every week until you observe nervousness, restlessness or twitching of the muscles—the signs of the beginning of strychnin intoxication. In most cases these symptoms do not develop until 1-12 or ⅛ grain or even a larger dose is reached. It must be understood that the drug is to be given in these doses four or even five times a day. The object is to impress the nervous system with the full stimulant effect of this drug. The sooner this end is attained the better will it be for the patient. For this reason you begin with small doses and work upward as rapidly as you can with safety. After the desired point has been reached the question arises whether it is better to continue the largest dose or to resume the original. I think it best not to vary from this line during the remainder of the treatment, for you do not wish to lose what has been accomplished. Keep the strychnin treatment up to the highest level of safety, but shun the point where its stimulus extends into the region of tetanus and of paralysis. It is best, however, to reduce the dose somewhat at this point. If, for example, it is found that ⅛ grain is a maximum dose reduce to 1-16 grain, gradually increase the dose again until ⅛ grain is reached, and then return to 1-16 or 1-12 grain. After you have increased and decreased the dose several times you will probably find that ⅛ grain no longer produces any dangerous symptoms, and that you now can give as much as 1-6 grain. When administered in this way the drug may be given for an indefinite period to the majority of phthisical patients.

The remedial effects of the drug show themselves in various ways. The nervousness, sleeplessness and pain in the chest will be ameliorated, and perhaps entirely disappear; the cough, expectoration and dyspnea will diminish; vomiting will abate; the appetite improves; the patient gains in flesh and color; the weak and rapid acting of the heart will become slower and stronger: the red corpuscles increase in number, and the patient becomes more hopeful and brighter.

Of all the drugs in our possession strychnin makes the most profound impression on the nervous system, and in my opinion yields a larger measure of benefit in the treatment of pulmonary consumption than can be derived from any other single agent. In connection with it I employ well regulated rest, good food, quinin, phenacetin, hypophosphites, electricity, cod liver oil, etc.

I will not weary you by relating any examples from my experience in confirmation of what I have said,[1] but will quote in part a "case of phthisis apparently cured" which was reported by Dr. William Pepper in the December (1895) number of *The University Medical Magazine:* Female, aged 21, with a decided phthisical family history, began to emaciate rapidly in March, 1893. In less than a month she was bedridden and weighed 100 pounds. She had high fever, night sweats, anorexia, vomiting, copious expectoration and all the physical signs of pulmonary disintegration. She received an egg albumin diet and the medicinal treatment consisted of 1-100 grain of strychnin nitrate with 1-1000 grain of atropin sulphate every two hours hypodermatically; and 1-50 grain of strychnin nitrate with 1-12 grain of the double chlorid of gold and sodium and ½ grain of a vegetable digestive every two hours by the mouth. After a few days the amount of gold and sodium was increased to ¼ grain every two hours. At first she showed signs of strychnin intoxication, and the amount was reduced, but she soon resumed the original dose, and after the first two weeks bore the drug well, although always just inside the border line of its toxic action. During April she improved decidedly, and during May the improvement was also very rapid. By the latter part of this month she weighed 125 pounds. The abnormal physical signs and the tubercle bacilli disappeared and in September she weighed 132 pounds, and was in perfect health. In August, 1895, she had a slight attack of pneumonia, after which all the symptoms she had two years previously, recurred, and her weight fell to 114 pounds. She was placed on her former treatment, and made a rapid recovery. On November 1 she again weighed 124 pounds, her cough and expectoration had almost disappeared. No tubercle bacilli have been found since the previous October.

Dr. Pepper, in summing up the case says, that among its noteworthy points are the absence from the treatment of all cough medication and antiseptics, and the large doses of strychnin and the double chlorid of gold and sodium with which the system was kept literally saturated.

There can be no doubt that this was an apparently hopeless case of phthisis from its very outset, and great credit attaches to the distinguished prescriber for guiding it to such a successful termination. The question arises as to which of the agents played the most prominent rôle in bringing about this issue. From my own experience with the drugs which were employed I believe that the strychnin is chiefly responsible for this, although in forming a correct estimate we must not lose sight of the value of the nutritious food and the physical rest.

When we take into consideration that insanity, idiocy, hysteria, chorea, epilepsy, asthma and all forms of nervous disorder are prone to develop into pulmonary phthisis; that the former diseases are frequently converted into the latter through heredity; that all poisons like those of alcohol, syphilis, lead, mercury, influenza, whooping cough, etc., have the power of engendering nervous disease and pulmonary consumption, and as a matter of fact the former are often followed by the latter disease; and that the markedly beneficial action of strychnin in this disease comes exclusively through the nervous system, it does not require a very great stretch of the imagination to perceive that the neurotic element plays a leading part in the etiology of pulmonary consumption.

[1] Also see "The Strychnin Treatment of Pulmonary Consumption."—*American Medico-Surgical Bulletin*, May 15, 1894.

Perchlorid of Iron in Treatment of Ingrowing Nail. Reghi's method is being extensively quoted, as he has been very successful with it. After soaking the foot until the scab is loosened and the pus washed off, a piece of cotton dipped in a 50 per cent. solution of perchlorid of iron is inserted in the ungueo-phalangeal groove, and the toe lightly wrapped up. This is repeated twice a day, the blackish scab that forms removed each time. The patient remains in bed a couple of days, and the cure is complete in twenty, although a small piece of cotton should be worn between the nail and the flesh for some time.—*Bulletin Méd.*, No. 58.

FUNCTIONAL DYSPEPSIA OF CHILDREN WITH ILLUSTRATIVE CASES.

Read in the Section on Diseases of Children, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

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WAUKEGAN, ILL.

The term *dyspepsia* is so frequently used by writers as a synonym for indigestion that one needs to explain the meaning he attaches to the word. In this paper it is to be understood as referring to the condition which permits or encourages acute attacks of deranged digestion or unnatural distress in the stomach or bowels from the presence or absence of normal food or its products. The acute attacks of interference with digestion are here termed indigestion. Frequent attacks of indigestion may occur in the course of a case of dyspepsia.

Functional dyspepsia includes all cases which are not due to some organic lesion of the stomach. Many cases of gastritis in children are sequelæ of indigestion and must be carefully differentiated from functional dyspepsia. But cases resulting from undeveloped stomachs properly belong in this class. From these limitations and explanations it may be seen that we include under the term functional dyspepsia cases which result from some congenital imperfection in structure, from improper food whether of quantity or quality, from variations of temperature especially increased heat, from the presence of bacteria or their products, from reflexes caused by diseases in other parts of the body, and from weakness following or accompanying general illness.

Case 1.—I have lately had under my care a baby born before the termination of the eighth utero-gestation month. It was small and though perfect in limb and feature, had little vitality. Its digestive powers were so feeble that its mother's milk caused it great distress. The mother's milk ceased in a few days. A wet nurse was secured but was soon dismissed because relief was not obtained and because the baby seemed to dislike the milk. Cow's milk, diluted, raw or sterilized or condensed, was borne but a short time without distress. Malted milk food (Horlick's) agreed for a short time, and then a return was made to cow's milk. These experiments occupied ten weeks. The milk was then predigested, with worse results apparently than had been experienced before. The bowels alternated between constipation and diarrhea. Vomiting was occasional; usually the dejecta consisted of the food unchanged. Fermentation and gaseous eructations were frequent. The child continued to grow and gain flesh. There was no doubt in my mind that the cause of the disturbance in this case was imperfect or under development of the stomach.

Such cases may persist through childhood and even to adult life. When they do it is difficult to differentiate them from another class of cases, which result from cicatrices following ulcers of the stomach.

Case 2.—I was called to see a baby seven or eight months old, at the breast. It was emaciated, yet nursed feebly. Examination of the mother's milk showed it to be poor in quality but abundant in quantity. The baby suffered pain from gaseous distension of stomach and bowels. Vomiting was frequent, and occasionally diarrhea. Treatment made no special impression. Then the infant was given cow's milk, but with no beneficial result, rather an increase of the dyspeptic symptoms. Other changes were made without relief until condensed milk (Swiss brand) was given. Very soon after this change the digestive derangement subsided and the little patient began to gain flesh. The recovery was complete. This case was undoubtedly one due to dietetic disturbance.

Case 3.—The influence of heat is illustrated by the following case: I was called in July to see a baby which was suffering with diarrhea. The patient vomited occasionally, suffered some distress in the stomach and bowels, took its mother's milk ravenously; diarrhea lienteric, except when charcoal, lime water or pepsin were given, then the discharges were better for a time. The child was ten months old. The weather was very warm. At first directions were given to remove nearly all clothing, bathe the patient frequently and keep it cool. The treatment was followed by immediate improvement. The weather became warmer, the patient worse. The use of cold water and ice relieved the symptoms. The patient's temperature was not increased. There were no evidences of enteritis or colitis. On cool, cloudy days the case was better, on warm days worse. A change to cow's milk was followed by negative results, no increase or diminution in symptoms. The patient recovered when cool weather came.

Case 4.—That the presence of bacteria may cause dyspepsia in an infant is well illustrated by the following: Baby F. was a year old, a bottle baby. It had attacks of stomach derangement every few days or weeks, especially during the summer. At such times it had colicky pains, distension of stomach and bowels, vomiting of coagulated milk, with similar coagula passing from the bowels, causing diarrhea. No fever. When I was called the condition was such as just described, somewhat aggravated by the warm weather. Everything about the child was dirty, an innumerable host of flies trying to clean things up. The bottle nipple was not clean, having many specks of milk coagula and fermented flakes upon it. The bottle was in the same unhygienic condition. Similar specks were found in the baby's mouth. Although a microscopic examination was not made, I was satisfied that the case was one of functional dyspepsia due to the bacteria and their products engendered in what was evidently a favorable culture medium. The treatment, which consisted in cleaning up the field for operation and the use of antiseptics, confirmed the diagnosis by producing a cure.

Case 5.—Cases of functional dyspepsia due to some neurosis are rare in young children, but the following I think well illustrates a case due to reflex influence induced by disease in some other part of the body. I was called to see a boy 5 years old who had been suffering with poor appetite and deranged digestion for some months. Gaseous eructations were frequent, but the stomach was not permanently dilated nor very frequently distended by gas. Food of almost any variety and kind, whether nitrogenous or non-nitrogenous, caused more or less distress. Soon pyrosis and other symptoms made eating dreaded. A few weeks after the beginning he showed signs of failure of nutrition, began to be anemic, lose flesh and grow weak. The bowels were regular. No tenderness of the stomach was manifested and the temperature was not above normal. About two months from the first indications of disturbance I was called because constipation had become troublesome and a tumor was discovered in the lower part of the bowel. Examination revealed no organic disease of the stomach, but did reveal a sarcoma of considerable size in the pelvic cavity, chiefly to the right of the median line. The tumor, about 4 inches in diameter, pressed upon the rectum and interfered with the normal evacuations of the bowel. Perhaps eventually the fermentation and ptomains occurring in the bowels caused by retained feces were prominent factors of the gastric as well as intestinal disturbances. The case passed rapidly to a fatal termination without further gastric derangements than those due to reflex influences and the poisoning caused by fecal ptomains.

Case 6.—The last case I desire to mention was one who had been prostrated for several weeks with typhoid fever. He was 8 years old and had been greatly weakened by the long sickness. When the milk diet was no further insisted upon and a gradual change was made to other food, gastric disturbances in the way of eructations, distress, distension and heartburn were frequent. These continued for three weeks. They were due to the anemic and atonic condition of the stomach and should certainly be considered functional disturbances. Dietetic care and recovery of strength and health removed all dyspeptic symptoms, so that after three weeks and since there has been no evidence of gastric trouble.

Other cases of anemia and atonic conditions may be accompanied by functional dyspepsia, just as in adults.

This brief presentation of cases will help to impress the writer's views of etiology and treatment of functional dyspepsia. By far the greater number of cases are due to improper food, the improper administration of food or to reduced vitality. An extended experience with the use of hydrochloric acid and pepsin will convince one that the relative number of cases cured by these remedies is small; in fact, the number benefited will be disappointing. Still we can not rely exclusively upon dietetic and tonic treatment. An attempt to render the alimentary canal aseptic is

paramount. The following are the chief indications to be met in this condition: 1. Correct the food both as to quantity and quality. 2. Try to render the stomach and intestines aseptic. 3. Assist nature in her effort to restore the natural functions and tone up the system.

1. Too frequently the undeveloped state of the salivary glands in the first few months of infancy is forgotten and food, such as rice water and cereal preparations, is given which can not be digested in the stomach and in many cases at least is not completely digested in the intestines. A similar result may obtain if given in too large quantities later in life. Under such circumstances the undigested food becomes a nidus for the growth of bacteria, fermentations result, irritating gases and bacterial products may cause diarrhea and at times constipation. A too abundant proteid diet of eggs and meat may in a similar manner and for the same cause result in putrefactive decompositions and the gases formed likewise produce constipation or diarrhea, even in older children.

2. The rational treatment in these cases is, of course, antiseptics. An effort should be made to correct or remove the cause and give antiseptics. Antiseptics can not be given in sufficient amounts to overcome the condition unless an irritating diet be corrected, especially is this true in nursing and bottle babies. It is true also in older children. Salicylate of bismuth, salol, carbolic acid, charcoal and other antiseptics used in these conditions have given me excellent results. I have treated diarrheas due to indigestion in the same way with like results. In functional dyspepsia, however, a habit of indigestion may be established, as it were, and a tendency to certain bacterial growths may become persistent. Here it is necessary to persevere in an antiseptic course of treatment. I have lately treated bacterial diarrhea of a very aggravated type, in patients old enough to be using a mixed diet, by the administration of a milk diet and salol without other medication and with the most satisfactory results. Salol may be given in doses of one to two grains every two or three hours until improvement occurs. Infants under one year yield very readily to salicylate of bismuth. Where from idiosyncrasy or other cause the salicylate is not well borne, salol in one-half grain doses will frequently be all that is needed. In many cases minute doses of calomel act as an antiseptic and afford gratifying relief. Cases of summer complaint preceded or accompanied by functional dyspepsia frequently yield quickly to the antiseptic treatment. The same is true of those dyspeptic cases following prostrating fevers, neuroses and other forms of exhaustion in which there is fermentation or putrefaction of food due to delayed or weak digestion and the formation of irritating gases. The dilatation of the stomach which so frequently accompanies functional dyspepsia in children is nearly always due to gaseous distention and is temporary. The removal or diminution of the gas is a step toward a cure. Where much distention exists and antiseptic practice does not afford ready relief, the stomach-tube or a soft catheter may be introduced through the mouth or nose and the gas allowed to escape. The general douching of the stomach seems to me to be less valuable in children than in adults, but sometimes it is useful to remove offending matters. The douche is sometimes of value also in atonic cases where the gastric walls are relaxed by over distention or a weakened condition of the general system, anemia, etc.

3. Finally it is necessary in many instances to give hydrochloric acid, pepsin, lactopeptin, peptenzyme, papoid, diastase and similar preparations to help correct the deranged secretions and assist in digesting the food. In addition to the administration of these internal remedies which act chemically or by catalysis, stomachics, the aromatic sulphuric acid, nitric or the nitro-muriatic acid and other preparations to stimulate the secretions may be needed. An alcohol sponge bath twice a day followed by inunction with cocoanut or olive oil to which quinin may be added in suitable cases, frequently aids materially in restoring the patient to health and vigor. The use of malt preparations and other tonics is frequently demanded. The anemia, neurasthenic or other conditions of depressed vitality will guide in their administration.

THE TREATMENT OF CHRONIC INFLAMMATION OF THE BLADDER, WITH REPORTS OF TWO CASES OF CONGENITAL DIVERTICULA.

Read before the Colorado State Medical Society, June, 1896.

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Chronic imflammation of the bladder is practically always due to microörganisms, the one most often encountered being the bacillus coli communis, which exists normally in such abundance in the intestinal canal. The gonococcus, the tubercle bacillus, the typhoid bacillus, the various pyogenic bacteria, etc., are also frequently found. It should never be forgotten that it is not a calculus, an enlarged prostate, a tumor, or a quantity of residual urine which is the direct cause of an inflammation, but the bacteria which have in some manner gained entrance to the bladder in presence of these conditions. Even a cancer does not produce inflammatory symptoms until infection has taken place. I had recently under my care an old gentleman with vesical carcinoma, whose urine remained free from pus for a considerable time after the growth began. It is possible for germs to enter the bladder through the kidneys, the urethra, and even through the blood, but in most cases catheterization is responsible for simple infection. A vesical calculus may exist for years without a sign of cystitis, provided no instrument has been introduced into the bladder. I have seen a man with an enlarged prostate whose bladder had been dilated, almost to the umbilicus, with residual urine for over two years, and yet the urine when removed was as clear as spring water.

From a therapeutic standpoint, chronic inflammations may conveniently be grouped under three heads: 1, inflammation in connection with the presence of a foreign substance—calculus, tumor, piece of catheter, etc.; 2, inflammation in connection with the presence of residual urine; 3, inflammation due to specific infection, such as gonorrhea, tuberculosis, syphilis, etc. Under the last heading may be placed inflammations due to certain microörganisms other than those of the diseases mentioned.

The first two groups are closely allied. It is not so much because a foreign substance exists, or because

it injures the mucous membrane, that inflammation occurs: but because the bladder is unable to clear itself sufficiently of objectionable ingredients of the urine, which remain collected about the substance. In other words, it is to the residual urine that the trouble is due. Nevertheless, the divisions given above are retained for the sake of convenience.

1. Inflammation in connection with foreign substances.—It is self-evident that rational treatment indicates removal of the offending substance, be it stone, tumor or other material. Simple removal is usually sufficient, provided no obstacle to complete emptying of the bladder remain, such as atony, a diverticulum, etc. I have observed a case in which a stone had existed in the bladder for nearly fifteen years, where the marked inflammatory symptoms disappeared within a few days after lithotomy had been performed.

2. Inflammation in connection with residual urine.—This is found in enlarged prostate, stricture of the urethra, paralysis and paresis of the bladder, certain diverticula, etc. In case of stricture, the enlargement of the narrowed urethra is the essential feature of treatment. The management of other forms is not so simple, and often taxes the surgeon's resources to the utmost.

General treatment.—It should be appreciated by all that general treatment is of much less importance than is usually supposed. The various balsams, resins and other compounds, so often mentioned in books and so widely advertised, often do some good, but as curative agents they are sadly deficient. They are, nevertheless, prescribed on every hand, frequently to the exclusion of local measures. Local treatment in chronic cystitis is the only reliable treatment.

We do not speak at present of "soothing the mucous membrane" by internal remedies, but of "inhibiting bacterial growth by means of antiseptics." Good may be accomplished in this way, although much less than is often imagined. Perhaps the most satisfactory drug for the purpose is salol, given every few hours in 5 grain doses.

The patient's bowels should be kept open, not only because constipation leads to congestion of the vesical veins, but because there is no more efficient method of removing poisonous substances from the system than through the bowels. The necessity of proper foods, tonics, cleanliness of the skin, etc., will suggest itself. Plenty of milk at frequent intervals does excellent service, both as a food and as a diluent of the urine.

Local treatment.—The main indications are: 1, disposal of residual urine; 2, washing out the bladder.

Residual urine.—This must be removed, no matter how small the quantity. If the urethra will easily admit a catheter of sufficient size to thoroughly drain off not only all traces of urine, but stringy pus and clots of blood which may also be present, then the regular use of a catheter will often be sufficient. When the inflammation is obstinate or severe, a soft catheter may at times be tied in and continuous drainage instituted. This method, which is not extensively used in this country, gives excellent results, even in cases of enlarged prostate. But if only a very small or specially constructed instrument can be employed, or if the patient can not be entrusted to catheterize himself, or if the channel is irritable, or if there are other reasons why the use of a catheter is unsatisfactory, then more radical procedures become necessary. At the present day the operative measures most frequently adopted are castration, resection of the vasa defferentia and suprapubic cystotomy with retention of a permanent opening. A sufficient number of cases have been reported for us to say with considerable certainty that, in general, castration furnishes the surest and safest means of combating the evil effects of an hypertrophied prostate. Some cases of inflammation, however, are so severe, and the debilitated patient so much in need of immediate relief, that suprapubic cystostomy should be done at once, and thorough drainage of the bladder secured. In all other cases castration is applicable, provided the nature and consequences of the operation are fully appreciated by the patient. Among those within the age of sexual activity there will always be some who naturally object to the removal of the testicles, no matter how strongly the operation may be indicated. For these the older operation of prostatectomy is indicated, although it should not have the preference, on account of its uncertainty and danger. For patients who, while recognizing that their term of sexual activity is past, still object to castration for various reasons, resection of the vasa deferentia may be done, although it offers at present a less certain prospect of cure than removal of the testicles.

Washing out of the bladder.—Several points should be borne in mind in this connection:

1. The bladder must not be over-distended, as this may keep up a chronic inflammation which would otherwise tend to subside. There is also reason to suppose that septic material can in this way be forced into the mouths of the ureters, thus leading to kidney complications. No more than four or five ounces of fluid should be employed, and less than this is often preferable. A good-sized syringe of hard rubber, which can be easily used with one hand, is safer and better adapted to the purpose than a fountain syringe, although the latter is in general use.

2. The prostatic urethra should be irrigated as well as the bladder, especially in gonorrheal affections, as it is often the seat of inflammation which may reinfect the adjacent viscus. The catheter should be slowly inserted while the fluid is being injected until the fluid no longer appears anteriorly at the meatus, but passes through the deep urethra into the bladder, the eye of the catheter being just beyond the constrictor muscle. When practicable, it is well to leave considerable fluid in the bladder, which the patient is instructed to pass after the catheter is removed, thus irrigating the channel from behind forward. If the bladder, however, is insufficient, and the solution not a mild one, it is better to withdraw it entirely. In obstinate cases of posterior urethritis it answers an excellent purpose to occasionally inject a few drops of concentrated solution of nitrate of silver ($\frac{1}{2}$ to 5 per cent.) with an Ultzmann's capillary injector.

3. A single, not a double, catheter should always be used. The current from a double catheter selects a short, easy channel for itself, and passes directly from one eye of the instrument to the other without distending the folds of the mucosa and cleansing the bladder as it should.

4. When the organ is not too sensitive, the fluid should be injected with some force, so as to more effectively wash the mucosa.

5. The catheter should be soft rubber or linen, as large as can be used without undue discomfort, especially when thick pus and clots of blood are present,

and it should not be forgotten that a catheter is just as large as its eye and no larger.

6. Almost any antiseptic or astringent fluid will give good results if properly employed. Personally, I prefer the permanganate of potassium or the nitrate of silver. The former is both an antiseptic and an astringent, and its strength can be conveniently judged by the depth of color of the solution. The stains are quickly removed with oxalic acid. The nitrate of silver is less easily handled, but sometimes gives better results.

7. One daily irrigation is usually sufficient, although two may be required. Care should be taken not to carry the treatment too far and cause more harm than good by undue interference.

8. It is generally more satisfactory to irrigate an insufficient bladder with the patient standing, as the viscus is more easily cleansed in this position.

In this connection I desire briefly to mention two cases of congenital diverticula of the bladder. These malformations are very rare and present many puzzling features to the diagnostician. They are similar in appearance to the diverticula whch occur in inflamed bladders with hypertrophied trabeculæ and obstruction to the outflow of urine. In congenital diverticula, however, there is not necessarily any damming back of the urine with distension, and there is little or no tendency to progressive enlargement. At times practically a double bladder exists, with a ureter emptying into each division, but the results are clinically the same—the retention of residual urine, and a tendency to chronic inflammation and the formation of calculi.

One case came under my charge a number of years ago in the Cincinnati Hospital. He was a young man of good physique, who had experienced no marked urinary disturbance until he suffered an attack of gonorrheal cystitis. This proved to be extraordinarily obstinate, and yielded to none of the usual forms of treatment. There was little or no prostatic enlargement and no urethral obstruction. It seemed almost inexplicable to me at the time, that after the man had passed his urine, a catheter would draw off an additional quantity, and after some moving about of the instrument in the bladder, still more would be obtained. The patient shortly died with surgical kidney, and at the autopsy four or five diverticula were found each somewhat larger than a walnut. They diverged from the posterior and inferior walls of the bladder, were perfectly smooth within, and their openings were about the size of the little finger.

The second case is a young man of 29, who has recently been under my care. He is well built and active both physically and mentally. Up to the age of about 14 nothing abnormal was observed in connection with the urinary apparatus except that the urine appeared to be unusally strong in odor. About fifteen years ago it became necessary to pass a catheter, following an injury to the back with hematuria. Cystitis together with pyuria developed, which persisted for some years. After much and varied treatment, it was finally cured by irrigation. The patient's health remained good for several years, until, as a consequence of an injury to the back, retention of urine took place and a catheter was again passed. Cystitis once more supervened in an aggravated form, and continued for six or eight years, in spite of the most strenuous efforts toward its subjugation. During this period the gentleman was under the care of many of the world's most eminent surgeons, including Agnew and J. William White of Philadelphia, Sir Henry Thompson of London, Czerny of Heidelberg, and Guyon of Paris. The presence of a diverticulum was not suspected even after prolonged and careful examination with the cystoscope. I mention these names in order to show that the diagnosis of a congenital diverticulum of the bladder may be exceedingly difficult, not to say well nigh impossible. When the patient came under my charge he was in a pitiable condition. He was forced to urinate, with pain and strangury, about every twenty minutes, both night and day, and it was necessary to frequently irrigate the bladder in order to make life even tolerable. The urine was loaded with blood and pus, and was offensive in the extreme; there was, however, little fever. The passage of a Thompson's "searcher" in the effort to find a stone, stirred up a quantity of decomposed urine, which called my attention to the possibility of the existence of a diverticulum, but the idea was partially dismissed because of the amount of hemorrhage, which was more consistent with the presence of a tumor or of tuberculosis. A careful examination of the urine by Dr. E. R. Axtell and myself failed to reveal tubercle bacilli, so that the idea of tuberculosis was given up. A suprapubic cystotomy was made for purposes of drainage and exploration, especially as some form of tumor was strongly suspected. An opening large enough to admit the little finger was found in the trigonum, to the left of the median line, which communicated with a diverticulum the size of a Messina orange, passing upward and backward along the side of the sacrum to the left of the rectum. The interior was smooth and nearly spherical in shape. After the pouch had once been recognized it could easily be felt by a finger in the rectum. It being manifestly impossible to remove the diverticulum through a suprapubic incision, it was decided to drain the bladder until the cystitis had subsided and then attempt to close the opening without recurrence of inflammation. If this failed an attempt could be made to remove the pouch through the ischio-rectal fossa. The cystitis rapidly and completely subsided as soon as thorough drainage was instituted, the patient improving rapidly in weight and general condition. An attempt to close the artificial urethra was soon followed however by a reappearance of the inflammatory conditions, due probably to infection from the prostatic urethra. Drainage was again procured and the entire urethra and bladder subjected to frequent irrigation with permanganate of potassium and nitrate of silver. The next proceeding was to drain the bladder through a catheter tied in the urethra while permitting the fistulous opening to close. This also failed, as the posterior urethra proved to be too sensitive to permit the catheter to remain more than a few hours, despite all preparatory treatment. It was decided to institute continuous drainage of the bladder through the supra-pubic opening, for a time at least. This was accomplished by means of a soft catheter, held by a truss-like arrangement, and emptying into a rubber urinal secured to the thigh. The apparatus, which proved to be very effective, was constructed by cutting a small, hollow rubber ball in half, and passing the catheter through a slit in the bottom of one of the hemispheres. The section of the ball fit nicely into the large dimple surrounding the orifice of the artificial urethra, and served to hold the catheter securely in place. A hard-rubber plate

secured around the waist and under the perineum by rubber bands held the ball in position. The patient has been wearing this apparatus in perfect comfort for about three months, and finds that he is inconvenienced scarcely at all by his condition, while his health and energy have been completely restored.

An examination of these two cases presents some interesting points: 1. Congenital diverticula can exist for many years without their possessors being aware of any abnormality. 2. Cystitis may not take place until infection is caused by catheterization, gonorrhea, etc. 3. Cystitis in the presence of diverticula may sometimes be cured without opening the bladder, and remain so indefinitely, provided reinfection is not brought about. 4. Hemorrhage from chronic cystitis may be so great as to strongly simulate hemorrhage from a tumor. 5. Residual urine, without stricture of the urethra, enlargement of the prostate, or paresis of the bladder, should be suggestive of a diverticulum. 6. Even in the best hands, the opening of a diverticulum may be overlooked with the cystoscope. Perhaps a reason for this is that the mucosa during life is so congested and folded about the opening as to conceal it. 7. In obscure vesical affections, with cystitis, it is rational to open the bladder for purposes of exploration and drainage, the preferable incision being the suprapubic, as offering the better opportunity for removal of foreign bodies, if such be present.

DANGERS OF BICYCLING; WITH REPORT OF A CASE OF ACUTE DILATATION OF THE HEART.

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Ever since the great popularity which has attended bicycling in this country, numerous articles have appeared in the medical and lay press pointing out real and imaginary dangers liable to beset those attracted to this sport. These dangers have attended both sexes, more particularly the female bicyclists, and consisted in disturbances affecting the pelvic viscera. No doubt over-indulgence in this pastime can and will produce congestions and irritations of these organs, perhaps displacements and even inflammations, but such cases are comparatively rare.

From the moral point of view another danger has been discovered by the Woman's Rescue League of Washington: That the bicycle is nothing more or less than the devil's advance agent, and through the opportunities which it offers is causing an alarming increase of immorality among women. The writer believes this to be true only in so far as it affects those women upon whom the devil already has a mortgage, and employs the wheel only as a subterfuge to foreclose the claim. The wheel has been a great aid to physicians in the treatment of neurasthenic, hysteric and hypochondriac women, and the good it has done to them and the pleasures derived from it by others will more than counterbalance the harm which those unable to ride think it has and may create. Pleasure and health can be derived from bicycling only so long as the laws of hygiene and common sense are heeded, and their violation will be followed by disagreeable consequences.

The male sex is predisposed to that ungainly and unhuman distortion, the "camel's back," as a result of faulty posture and ambition for speed, and perhaps fame. Not only is the spinal column strained and distorted, but the thoracic and abdominal viscera are subject to undue pressure, and hence to restricted movements and imperfect physiologic action. No sport is a healthy one which in its performance coerces the body into an unnatural position, and the great popularity attained by rowing and base ball is partly due to the comfort and pleasure which the normal position of the body insures.

Through long-continued pressure caused by long rides and faulty fitting saddles, the male genito-urinary tract is liable to damage, and this should therefore be carefully guarded against. The dangers which do, arise, however, from bicycling affect the beginners, and scorchers mostly, who have not learned the secret of the sport, namely, moderation.

After consent is obtained from the family physician to ride, a properly geared wheel should be selected, with an easy and comfortably fitting saddle, the handle bar raised so as to give the body an erect and graceful position, and this advice constantly borne in mind, that the sport should be discontinued at the first sign of fatigue. As the days go by this fatigue will grow less and less, and the rider able to take longer spins as the muscles become firmer and more accustomed to this form of exercise. The whole system undergoes a certain kind of training or physical education, the heart and respiratory muscles accustoming themselves to the necessary strain just as do the extensors of the thighs and the calf muscles. Just as over-indulgence results in tiredness and lameness of the leg muscles, so also are the heart and respiratory muscles affected. The heart through increased work put upon it by long, rapid spins is taxed to its utmost, and when persevered in, serious damage to the heart walls or heart valves may result. As Osler truthfully says: "Endurance in prolonged contests is measured by the capabilities of the heart and its essence consists in being able to meet the continuous tendency to overstep the limits of dilatation."

One form of heart trouble especially is attended upon over-exertion and over-fatigue, namely, the acute dilatation of the heart walls, due to over distension of the muscle fibers. The cause of this dilatation is an incomplete exhaustion of the ventricles, generally the right, during systole, and an excessive engorgement during diastole with possibly some defective nutritive change in the muscle fibers. The symptoms arising from this condition are subjective and objective and are well illustrated in a case which recently came under my observation.

James H. C., age 37 years; height 5 feet 6 inches; weight 138 pounds; married and has eight children. He had an attack of rheumatism when 12 years of age, and typhoid fever when 29. Has always been a hard-working man, employed on the railroad sometimes ten to fourteen hours daily. About May 1, 1896, he purchased a wheel and rode occasionally from his home to the railroad yards, perhaps a distance of half a mile. On May 8, 1896, he accompanied a few friends on a spin into the country and rode four miles in twenty-five minutes. On dismounting he noticed a severe pain over the left side of the chest extending to the neck, also that he was completely "winded," and the left side of the chest was throbbing violently. After only a few minutes rest, urged by his friends, he remounted the wheel and rode home, covering the distance in thirty minutes. On reaching home he could scarcely breathe, was in profuse perspiration, trembled all over and was obliged to go to bed. Vomited during the night; the following morning he found he was still in the same condition and was unable to go to work, and scarcely able to be on his feet. The least exertion caused his left side to "thump" vigorously, while the vessels in the neck throbbed so wildly as to make them perceptible. Patient also noticed a feeling of weakness all over the body and a

stiffness of the knee joints, accompanied always with great dyspnea.

After remaining idle for several weeks and not obtaining very much relief, he consulted me on July 20, 1896, for "weakness and trembling," thinking that he had some nervous disorder; he stated that his sickness began on May 8, 1896; that he worked the day previous and up to that day was in his usual good health.

Status Præsens.—Face has an anxious, apprehensive expression; eyes are glassy and facial muscles quivering. Pallor and emaciation are pronounced. There is a slight tremor to the head; is not painful on percussion and has never had headache.

The examination of the eyes was made by Dr. R. H. Satterlee, of Buffalo, N. Y. "Ophthalmoscope shows hyperopia, right eye 2 diopters, left eye 1 diopter. No astigmatism could be discovered. Both eyes have unsteady lateral movement. Left eye does not move as freely as right eye. Weakness of all eye muscles, particularly the interni. Accepts no glass at first; vision later after wearing R. + .50 D., L. + .25 D. for half an hour, 20-20. These prescribed to be worn two months constantly."

Strength of arms diminished; dynamometer test shows, right hand 60; left, 40; tremulous and with increased tendon and muscular reflex action. The legs likewise are weakened, also tremulous, and the reflexes are exaggerated. There is no anesthesia or hyperasthesia of the face, arms or legs.

The chest offers the most important symptoms, both objective and subjective. The precordial area is largely increased and reverberates with every heart beat. The apex point is diffused and impossible to locate. On palpation a tremulous and purring sensation is experienced which is communicated to nearly the whole side of the thorax. Percussion shows increased area of cardiac dullness extending to the right of the sternum, to the left of the mammillary line and below the nipple. Auscultation does not reveal any valvular murmurs, although the sounds are indistinct and diffused. The heart beats number 130 to 150 per minute.

Urine is increased in quantity, but does not contain albumin or sugar. Bowels are regular. Sleep is fair but is often awakened by the heart's action. During the day he is aware of much fluttering of the heart while napping.

On July 27, 1896, I again had occasion to see the patient and found his heart in practically the same condition, beating 130 times per minute, and as tumultuously as on the former examination.

The history of this case leaves little doubt as to the correctness of the diagnosis—acute dilatation, and the cause of such dilatation—over bicycling. The distance covered and the time would be insignificant to a trained wheelman, but to one not accustomed to long rides it was quite an undertaking and was fraught with serious consequences. In conversation with beginners in the sport one hears so often, "I rode eight or ten miles to-day in such a time," or "I rode a mile in such a time and have only been on the wheel a few days," and yet these riders may never have taken any kind of regular physical exercise. They certainly are imprudent and should be discouraged in their ambitious tendencies until they are in condition to endure the necessary strain. To the writer this seems one of the greatest dangers of bicycling and yet one of the easiest to avoid.

THE STATISTIC EVIDENCES OF THE VALUE OF VACCINATION TO THE HUMAN RACE, PAST, PRESENT AND FUTURE.

Read before the American Medical Association at the Jenner Centennial Celebration, held at Atlanta, Ga., May, 1896.

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(*Continued from page 753.*)

[30] Dr. Kinnis, formerly Superintendent of Vaccination at Colombo, in his "Report on Smallpox as it appeared at Ceylon in 1833-4," and in an appendix relating to observation made by Dr. Forbes in the epidemic of 1830, gives enumerations from which the annexed table is compiled. It will be observed that the gradation of death rates marked in the last column, though far less detailed than in Mr. Marson's statement, is to the same general effect. And in the cases noticed by Dr. Kinnis himself the difference is further developed; for he distinguished persons pretending to have been vaccinated into such as had no marks, and such as had unsatisfactory marks of vaccination, and found that the death rate of the latter was 26 1/3, that of the former 32 1-7. Cases of chickenpox are not included in the annexed table, and Dr. Kinnis gives at length (pp. 10-14) his reasons for concluding "that the febrile eruptive disease known in Ceylon by the name of chickenpox arises from an infectious matter essentially different from that which produces smallpox and modified smallpox."—Op. cit. Colombo, Govt. Press, 1835.

Occurrences and fatality of smallpox.

	Number of cases	Number of deaths.	Percentage of deaths.
In persons decidedly not vaccinated	351	146	41.5
In persons having no marks or but unsatisfactory marks of vaccination	199	52	26.1
In persons having satisfactory marks of vaccination	187	3	1.6
In persons having marks of smallpox	4	2	.....

Comparison of the number of cases of smallpox which were treated in the General Hospital at Vienna during the 5 years, 1851-55 inclusive, as regards the ages of patients and the number of cases which terminated fatally.

Age of patients.	Vaccinated.		Not vaccinated.	
	Total number.	Number of deaths.	Total number.	Number of deaths.
To 10 years of age	55	8	34	15
From 11 to 20	834	16	111	25
From 21 to 30	892	43	83	23
From 31 to 40	171	7	10	5
From 41 to 50	35	1	3	3
From 51 to 60	9	1	8	..
Total	1,995	76	244	71

The number of cases of variola in various forms was 2,239, namely:

Who had been vaccinated 1,995
Who had not been vaccinated 244

Vaccinated as well as non-vaccinated persons were seized with the smallpox; still, with this difference, that of the vaccinated cases 8 1/3 per cent., but of the non-vaccinated 33.3 per cent. were cases of variola vera.

Of the 1,995 vaccinated cases 76, and of the 244 non-vaccinated cases 71, terminated fatally.

[31] "Interesting and instructive are, moreover, the following figures which throw light upon the relation existing between unvaccinated, vaccinated and revaccinated persons becoming sick or dying of smallpox. According to the memoranda of certain hospitals, among those who died of smallpox during the years 1870 and 1871 were:

	Unvaccinated. Per cent.	Vaccinated. Per cent.	Revaccinated. Per cent.
In Muenster	80	13	0
In Posen	70	12	2
In 4 hospitals of Berlin	54	13	0
	70	16	4
	66	15	4
	81	14	9

In Chemnitz in 1871, among 249 dead were only seven vaccinated persons.

According to Buchanan in 1881 in England, there was only one victim who had been vaccinated while there were 200 deaths among unvaccinated children from 1 to 2 years old.

In Bavaria in 1882, among the smallpox cases were counted 14.6 per cent. vaccinated, 5.8 per cent. revaccinated, 45.5 per cent. unvaccinated.

In the Imperial General Hospital of Prague during ten years, from 1847 to 1856, 872 persons were treated for smallpox; of these, 819 had been successfully vaccinated, and forty-three unsuccessfully or not at all. With ten the vaccination or its result, could not be ascertained in a manner to be relied upon. Here must be particularly remarked that in 1847, in the aforementioned institution, not one case of smallpox is recorded.

Out of the 872 patients, sixty-three died, and of this number

[30] See first report Royal Vaccination Commission, 1889, p. 75.

[31] U. S. Consul, Berlin, loc. cit.

forty-one were of those who were described as successfully vaccinated, twenty as vaccinated without success, and two as those concerning whose vaccination nothing certain was known.

Leaving out those concerning whose vaccination nothing could with certainty be said, it is here shown that of the successfully vaccinated the twentieth part died; of the unsuccessfully vaccinated the half, while the number of vaccinated patients was nineteen times greater than that of the non-vaccinated.

In the Hospital of the Brothers of Mercy at Prague, during the years 1847 to 1856 inclusive, 410 patients were treated for smallpox; of these, 370 were vaccinated, and only forty non-vaccinated. Of the vaccinated four died; of the non-vaccinated five died.

Of the vaccinated (the success or non-success of the vaccination not being taken into consideration) the ninety-second part died, of the non-vaccinated the eighth part died, while the number of the vaccinated was nine and one-fourth times greater than that of the non-vaccinated.

In the Elizabethan Hospital at Prague, during six years, from 1851 to 1856, 118 cases of smallpox were admitted; of these, 108 were vaccinated and ten non-vaccinated. Of the vaccinated two died, of the non-vaccinated one died; *i. e.*, one fifty-fourth of the vaccinated, and one-tenth of the non-vaccinated, the vaccinated patients being ten and four-fifths times the number of the non-vaccinated.

In order to arrive at an idea as to the frequency of attacks of smallpox during the different periods of life, and the amount of safety secured by vaccination, we subjoin the following tables, which show the rates of mortality among the vaccinated and non-vaccinated patients of the General Hospital, Vienna, during the period above mentioned:

Ramsey on smallpox, Transactions New York Medical Society.

Ages.	Total number of cases.	Vaccinated.		Non-vaccinated.	
		Cases.	Deaths.	Cases.	Deaths.
1 to 10 years	418	234	35	184	74
11 to 20 years	2,634	2,228	83	406	83
21 to 31 years	2,671	2,329	128	342	115
31 to 40 years	406	354	21	52	24
41 and upward	84	72	4	12	4

Deaths per 100 cases at each age, as follows:

	1–10	11–20	21–30	31–40	41 and upward.
Among 5,217 vaccinated	14.9	3.7	5.6	5.9	5.5
Among 996 non-vaccinated	40.	20.4	33.6	46.2	33.3

Report of the Faculty of Medicine at Prague, submitted to Minister of the Interior, November, 1856.

Vaccinated and unvaccinated cases of smallpox which terminated fatally, according to the official vaccination return (21 years).

Year.	Cases of vaccination.	Remaining non-vaccinated.[32]	Smallpox.			
			Cases.		Deaths.	
			Vaccinated.	Non-vaccinated.	Vaccinated.	Non-vaccinated.
1835	132,727	4,029	505	430	20	136
1836	130,194	3,319	374	215	26	64
1837	126,123	3,971	57	123	4	52
1838	133,527	3,967	101	96	15	32
1839	132,523	3,906	160	168	20	70
1840	140,898	3,585	1,138	966	89	351
1841	139,471	3,482	1,583	1,522	83	382
1842	142,970	3,180	681	703	39	208
1843	142,314	2,874	627	714	21	229
1844	126,647	6,109	61	148	7	43
1845	149,612	6,410	55	63	2	25
1846	146,467	5,475	6	50	..	7
1847	141,268	5,361	19	25	..	4
1848	132,320	5,718	227	169	17	49
1849	139,523	5,704	575	645	63	177
1850	156,561	6,314	568	374	14	131
1851	152,294	4,694	16	293	3	43
1852	161,364	3,689	252	231	12	65
1853	145,038	3,067	327	168	3	39
1854	161,313	2,927	457	203	7	61
1855	135,424	2,349	389	156	8	56
Total	3,005,578	90,130	8,178	7,462	423	2,224
Average	143,122 1/21	4,291 1/2 1	389 9/2 1	355 7/2 1	20 3/2 1	105 1/2 1

REMARKS.—One case of smallpox occurs among 367 2/3 vaccinated; 12 1/3 non vaccinated. One fatal case of smallpox occurs among 7,166 1/3 vaccinated; 40 2/3 non-vaccinated. Among cases of smallpox died the nineteenth part of the vaccinated; the third part of the non-vaccinated.

"M. Bousquet,[33] in his detail of the epidemic which prevailed at Marseilles in 1825, states that the whole population was estimated at 40,000. Of these, 30,000 had been vaccinated, 2,000 had had smallpox, 8,000 had neither been vaccinated nor had smallpox. Of the 30,000 vaccinated 2,000 were seized with smallpox, twenty of whom, or one for every hundred affected, died. Of the 2,000 who had before had smallpox, either naturally or by inoculation, twenty were attacked, and of these four died, or one for every five who took the disease. Of the 8,000 who had not been vaccinated nor had smallpox, 4,000 contracted it and 1,000 died, or one in every four. By this it appears that one-half of the non-vaccinated, one-fifteenth of the vaccinated, and one-hundreth of the variolated took the disease. But such was the difference in the comparative mortality of the attack in the vaccinated and the variolated, that while the variolated part of the population were cut off in the proportion of one out of every 500, the vaccinated lost only one out of every 1,500; or, in other words, of an equal number of variolated and vaccinated cases, three of the variolated died from the second attack, for every one that died who had been previously vaccinated."

In Berlin in the year 1872,[34] the mortality of the disease was 243 per 100,000 population, and the year after it was 262. Thereupon vaccination during the first year of life and revaccination at the age of 12 years was made compulsory by law, and with the effect that in the year 1875 the death rate was lowered to 36 per 100,000 inhabitants; the next year it was lowered to 31, the next to 3 and so through later years with an average annual mortality of 1.7 per 100,000 people. During the year 1890 only fifty-eight cases occurred in the whole German Empire, or 1.18 cases to each 1,000,000 of population.

A village in Leicestershire, England, of 1,300 inhabitants was visited by the pestilence in 1872. All but two of the inhabitants were efficiently vaccinated and escaped the disease; whereas the two unvaccinated persons died of it.

The late Dr. J. H. Rauch, for many years Secretary of the State Board of Health, has shown that in the Illinois epidemic of 1881–83, the mortality rate of the vaccinated was approximately 6 per cent., and of the unvaccinated it was 49 per cent.

Corbally has demonstrated that in the Sheffield, England, epidemic of 1887–88, vaccinated children were, as compared with the unvaccinated, twenty times less liable to attack from smallpox, and twenty-four times less liable to die when attacked. That is to say, the vaccinated children had, as compared with the unvaccinated, four hundred and eighty fold security against death from smallpox.

In the Halifax, England, epidemic of 1892–93, the death rate from smallpox among vaccinated persons was 1.8 per cent., and among the unvaccinated it was nearly 41 per cent. No case occurred in a vaccinated child under 5 years of age, and in the Leicester epidemic of 1893 no case occurred in a vaccinated child under 10 years of age.

From the records of 5,000 cases treated in the Municipal Hospital of Philadelphia, according to W. M. Welch in the *New York Medical Journal*, March, 1894, it appears that the death rate in that institution in post-vaccinal cases, and all in which there had been an attempt at vaccination are included, was 16.26 per cent., and the death rate in non-vaccinal cases was 58.38 per cent.

Seventy-three per cent. of the cases in unvaccinated infants under 1 year of age ended in death, and no fatal case occurred among vaccinated infants of the same age. Between the ages of 1 and 7 years the mortality of post-vaccinal cases was 5.7 per cent., and of non-vaccinal cases it was 51.48 per cent.

In Chicago only seventeen cases of smallpox have occurred in the last fifteen years among the well vaccinated public school children of that city, whose average number exceeded 200,000.

Dr. Clendenin,[35] health officer of Cincinnati, Ohio, says that, in the epidemic of smallpox in that city (1868–69) 95 per cent. of those who died of smallpox were among the unvaccinated. He further says that no death occurred from smallpox in which there was unmistakable proof that the individual had been properly vaccinated.

Dr. Benj. Lee of Philadelphia, Pa., in his report to the Pennsylvania State Medical Society, 1873, shows that the mortality from smallpox in the epidemic then just ceased was 55.9 per cent. in the unvaccinated; in the vaccinated with one

[32] I presume that "ungeimpft verbliebene" in the third column is intended to denote (in comparison with the total births of the year) the number of infants who remain unvaccinated at the end of the legally specified time.—[J. S.

[33] Transactions American Med. Assn., 1865, p. 270.

[34] Vital Statistics, Indiana, 1894, p. 98–99.

[35] Dr. W. B. Davis, Transactions, Ohio Medical Society, 1870.

vaccinal scar it was 15.2 per cent., while the mortality among those having five or more scars was 5.5 per cent.

During 1875 the mortality among 1,866 vaccinated persons treated in the Riverside Hospital, New York City, was 375, while among the 405 patients who had never been vaccinated, 200 died.

Statistical tables demonstrating the unquestionable controlling power of vaccination over smallpox might be multiplied indefinitely, but I have already, I fear, entered too lengthily into this part of my subject. I will therefore close the statistical data under Proposition 6 by quoting the following:

1. Mortality from smallpox among the vaccinated, doubtfully vaccinated and unvaccinated.[36]

	Cases.			Deaths.			Mortality Per cent.		
	Vaccinated.	Doubtfully vaccinated.	Unvaccinated.	Vaccinated.	Doubtfully vaccinated.	Unvaccinated.	Vaccinated.	Doubtfully vaccinated.	Unvaccinated.
London Smallpox Hospital (1836-67)[37]	10,308	263	2,920	790	106	1,043	7.59	40.3	34.9
Metropolitan Asylum Board Hospital[38] . . .	13,575	2,130	3,973	1,027	671	1,593	7.56	31.5	40.0

2. Mortality from smallpox among the vaccinated, doubtfully vaccinated and unvaccinated, under 10.

	Cases.			Deaths.			Mortality. Per cent.		
	Vaccinated.	Doubtfully vaccinated.	Unvaccinated.	Vaccinated.	Doubtfully vaccinated.	Unvaccinated.	Vaccinated.	Doubtfully vaccinated.	Unvaccinated.
Metroplitan Asylum Hospitals[39] . .	1 291	359	1,512	56	102	745	4.33	28.4	49.2

Dr. Lyon Playfair in a speech in the British House of Commons, June, 1883, said: "On this point I would refer to the case of Leipsic, which for eighteen years prior to 1870, had zealously supported the anti-vaccination movement, and during that period there had been but twenty-nine deaths from smallpox, although vaccination had been greatly neglected in the town. When the pandemic reached Leipsic in 1871 the town had a population of 107,000, and smallpox attacked 1,027 of this number, or 9,600 per millon of the population, and out of 23,892 children under 15 years of age, 715 died, being 30,000 per million."

"The statistics of the London epidemic were prepared with great care, and the mortality among the vaccinated was 90 per million inhabitants, while among the unvaccinated it was 3,350 per million. In the hospitals 45 per cent. of the unvaccinated and 15 per cent of the vaccinated died."

Comparative mortality of smallpox after smallpox, and of smallpox after vaccination.

Authorities.	Smallpox after smallpox.			Smallpox after vaccination.		
	No. of cases.	Deaths.	Ratio of deaths to 100 cases.	No. of cases.	Deaths.	Ratio of deaths to 100 cases.
Thompson, Edinburgh.	71	3	4.2	310	1	0.3
Chelsea Military Asylum	26	3	11.5	24	0	0.0
Heim, Württemberg	39	14	35.8	147	42	28.5
Bosquet, Marseilles	20	4	20.0	2.000	20	1.0
Gregory, London.	9	2	22.2	789	46	5.8
Total	165	26	15.7	3,270	109	3.3

[36] In the statistics of the metropolitan smallpox asylums, the "vaccinated" are those who present marks, however imperfect, of a primary vaccination; the "unvaccinated" those who precent no marks, and in whose case it is admitted by the patients themselves, or their guardians, that they have never undergone the operation; the "doubtfully vaccinated" those who present no evidence of vaccination but who profess to have undergone the operation or have no knowledge as to whether they have ever undergone the operation. It is evident that the "doubtfully vaccinated" are really "unvaccinated."

[37] Marson: Evidence before the Select Committee on Vaccination, 1871.

It thus appears that, while they who take smallpox a second time die in the proportion of 15.7 in the 100, they who take smallpox after vaccination die only in the proportion of 3.3 in the 100—a proportion absolutely lower than the mortality of the mildest disease.

Borough of Sheffield, England. In this Borough in an epidemic of smallpox during the years 1887 and 1888, Dr. F. W. Barry, inspector of the Local Government Board, after having a house to house inspection made throughout these two years, gives the following report as the result of his investigation:

VACCINATED.

In the borough of Sheffield there resided 268,397 persons who had been returned as vaccinated. Of these 4,131, or 1.55 per cent., had been attacked by smallpox, and 0.07 per cent. died of the disease.

Of the 68,236 vaccinated children under 10 years of age 353, or 0.5 per cent., contracted smallpox, and 6, or 0.009 per cent., died.

Of 196,905 vaccinated persons aged 10 years and upward 3,374, or 1.9, contracted smallpox and 194, or 0.10 per cent., died.

UNVACCINATED.

There were 5,715 citizens of all ages returned as unvaccinated. Of these, 552, or 9.7 per cent., had been attacked by smallpox, and 4.8 per cent. died.

Of 2,259 unvaccinated children under 10 years of age 228, or 10.1 per cent., contracted smallpox and 100, or 4.4 cent., died.

Of 3,429 unvaccinated persons aged 10 years and upward 322, or 9.4 per cent., contracted smallpox and 174, or 5.1 per cent., died.

The proportions of unvaccinated and vaccinated who were attacked and who died of smallpox among the inmates of houses that were actually invaded by smallpox, that is where people were brought in actual contact with the disease, Borough of Sheffield, England, 1887–1888. Of course in the general population of the Borough a number of citizens were never brought into actual contact with infected persons or fomites.

In the whole Borough of Sheffield 18,756 persons of all ages were enumerated as living in houses invaded by smallpox and of these 4,703 or 25.1 per cent. contracted the disease, and 474 or 2.5 per cent. died.

The proportions of the population of the vaccinated and unvaccinated classes respectively, living in invaded houses in the entire Borough, who had been attacked by smallpox and who died of the disease, were as follows:

VACCINATED.

Of the 18,020 vaccinated persons of all ages enumerated as living in invaded houses 4,151, or 23 per cent., contracted smallpox and 200, or 1.1 per cent., died.

UNVACCINATED.

Of the 736 unvaccinated persons of all ages enumerated as living in invaded houses 552, or 75 per cent., contracted smallpox and 274, or 37.3 per cent., died.

CHILDREN UNDER 10 YEARS OF AGE.

VACCINATED.

Of 4,493 children under 10 years of age 353, or 7.8 per cent., contracted smallpox and 6, or 0.1 per cent., died.

Of 13,435 vaccinated persons, aged 10 or upward 3,374, or 28.1 per cent., died.

UNVACCINATED.

Of 263 unvaccinated children under 10 years of age 228, or 86.9 per cent., had smallpox and 100, or 38.1 per cent., died.

Of 469 unvaccinated persons 10 years old and upward 322, or 68.6 per cent., contracted smallpox and 174, or 37.1 per cent., died.

On page 42 of Report of Royal Vaccination Commission the following facts are to be found giving the proportions of the population of the Borough of Sheffield of the vaccinated and unvaccinated classes respectively at these several age-periods who at the end of the census had contracted smallpox, and who had died of the disease.

IN THE TOTAL ENUMERATED POPULATION.

VACCINATED.

Of 33,393 vaccinated children under 5 years of age 121, or 0.36 per cent., had been attacked by smallpox and 1, or 0.003 per cent., had died.

Of 34,843 vaccinated children aged 5 but under 10 years 232, or 0.67 per cent., had been attacked and 5, or 0.14 per cent., had died.

Of 32,965 vaccinated persons aged 10 but under 15 years 629, or 1.9 per cent., had been attacked and 11, or 0.03 per cent., had died.

Of 27,111 vaccinated persons aged 15 but under 20 years 979, or 3.6 per cent., had been attacked and 19, or 0.07 per cent., had died.

UNVACCINATED.

Of 1,981 unvaccinated children under 5 years of age 128, or 6.5 per cent., had been attacked by smallpox and 66 (exclusive of children under one month of age), or 3.3 per cent., had died.

Of 278 unvaccinated children aged 5 but under 10 years 100, or 36 per cent., had been attacked and 34, or 12.2 per cent., had died.

Of 235 unvaccinated persons aged 10 but under 15 years 91, or 38.7 per cent., had been attacked and 32, or 13.6 per cent., had died.

Of 282 unvaccinated persons aged 15 but under 20 years 84, or 29.8 per cent., had been attacked and 53, or 18.8 per cent., had died.

The above facts are extracted from the testimony of F. W. Barry, M.D., inspector of Local Government Board, Oct. 8, 1889, pages 39 to 42 inclusive, Second Report of Royal Vaccination Commission of England, submitted to Parliament, May 29, 1890.

[38] These include cases admitted into the following asylums: Deptford, 1878-81; Hampstead, 1876-78; Homerton Smallpox Hospital, 1871-82; Homerton, Fever Hospital, 1876-77 and 1881-82; Stockwell, 1882. *Vide* annual reports of the several hospitals. For further figures consult report of board of health of the city of Philadelphia, 1872; papers on vaccination by Mr. Simon, etc.

[39] Homerton Smallpox Hospital, 1871-80; Deptford Hospital, 1878; Stockwell Smallpox Hospital, 1882.

VACCINATED.

Of 14,788 vaccinated persons aged 20 but under 30 years 1,267, or 2.8 per cent., had been attacked and 69, or 0.15 per cent., had died.

Of 92,041 vaccinated persons aged 30 and upward 899, or 0.97 per cent., had been attacked and 95, or 0.1 per cent., had died.

UNVACCINATED.

Of 884 unvaccinated persons aged 20 but under 30 years 98, or 10.6 per cent., had been attacked and 61, or 6.9 per cent., had died.

Of 2,028 unvaccinated persons aged 30 and upward 49, or 2.4 per cent., had been attacked and 28, or 1.4 per cent., had died.

On page 43 of the same report will be found the following tables as to the proportions of vaccinated and unvaccinated in the invaded houses by age-periods.

VACCINATED.

Of 2,154 vaccinated children under 5 years of age enumerated as living in invaded houses 121, or 5.6 per cent., had been attacked by smallpox and 1, or 0.05 per cent., had died.

Of 2,339 vaccinated children aged 5 but under 10 years 232, or 9.9 per cent., had been attacked and 5, or 0.21 per cent., had died.

Of 2,496 vaccinated persons aged 10 but under 15 years 629, or 25.2 per cent., had been attacked and 11, or 0.4 per cent., had died.

Of 2,370 vaccinated persons aged 15 but under 20 years 979, or 41.3 per cent., had been attacked and 19, or 0.8 per cent., had died.

Of 3,279 vaccinated persons aged 20 but under 30 years 1,267, or 38.7 per cent., had been attacked and 69, or 2.1 per cent., had died.

Of 5,290 vaccinated persons aged 30 years and upward 899, or 17.4 per cent., had been attacked and 95, or 1.8 per cent., had died.

UNVACCINATED.

Of 154 unvaccinated children under 5 years of age enumerated as living in invaded houses 128, or 83 per cent., had been attacked by smallpox and 66 (exclusive of children under one month old), or 42.9 per cent., had died.

Of 109 unvaccinated children aged 5 but under 10 years 100, or 91.8 per cent., had been attacked and 34, or 31.2 per cent., had died.

Of 93 unvaccinated persons aged 10 but under 15 years 91, or 98 per per cent., had been attacked and 32, or 34.4 per cent., had died.

Of 98 unvaccinated persons aged 15 but under 20 years 84, or 85.8 per cent., had been attacked and 53, or 54.1 per cent., had died.

Of 124 unvaccinated persons aged 20 but under 30 years 98, or 79.1 per cent., had been attacked and 61, or 49.2 per cent., had died.

Of 154 unvaccinated persons aged 30 years and upward 49, or 31.8 per cent., had been attacked and 28, or 18.2 per cent., had died.

NOTE.—"Those classified as vaccinated include all persons successfully at any period beyond thirteen days prior to the appearance on them of the eruption of smallpox. As a matter of fact I do not think there is a recorded case in which smallpox quickly followed vaccination or re-vaccination when the interval between the operation and the appearance of smallpox exceeded six or seven days. Those classified as unvaccinated include all persons who have either never been successfully vaccinated or whose vaccination was performed for the first time within thirteen days of the appearance on them of the eruption of smallpox. In the vaccination census if a person stated that he was vaccinated that was accepted as correct; if he stated that he was unvaccinated that again was accepted as correct. A certain number were reported as vaccinated who really were unvaccinated." Barry, loc. cit.

Question 1988. Dr. Barry continuing (see page 45) said: I propose to read in very much the same manner as I have read with regard to the census data, the relations of vaccination and smallpox as indicated by the health office data. I first of all take page 190. The total cases of smallpox reported to the health department to have occurred in the Borough of Sheffield during the period from the commencement of the epidemic to the 31st of March, 1888, were 6,088 in number. Of these it was stated that 5,035 were of the "vaccinated" as against 1,053 of the "unvaccinated" class. In 589 cases, or 9.7 per cent., of the total of all classes attacked the disease proved fatal. Of the 5,035 persons of the "vaccinated" class attacked, 246, or 4.9 per cent., died; whilst of the 1,053 persons of the "unvaccinated" class attacked 343, or 32.6 per cent., died. In the "vaccinated" class smallpox is reported to have attacked 97 persons under 5 years of age, of whom 1, or 1 per cent., died: 243 between 5 and 10 years of age, of whom 6, or 2.5 per cent., died; 2,034 between 10 and 20 years of age, of whom 38, or 1.9 per cent., died; 1,579 between 20 and 30 years of age, of whom 87, or 5.5 per cent., died; and 1,084, aged 30 years and upward, of whom 114, or 10.5 per cent., died. In the "unvaccinated" class, smallpox is reported to have attacked 242 persons under 5 years of age, of whom 113, or 46.7 per cent., died; 184 between 5 and 10 years of age, of whom 39, or 21.2 per cent., died; 380 between 10 and 20 years of age, of whom 92, or 24.2 per cent., died; 169 between 20 and 30 years of age, of whom 65, or 38.5 per cent., died; and 78 aged 30 years and upward, of whom 34, or 43.6 per cent., died.

Dr. Barry, page 51, Second Report of Royal Vaccination Commission gives a tabular statement showing the fatality per cent. of admissions in each hospital and all hospitals in Sheffield in 1887 and 1888, and says:

From an examination of that table it will be seen that there is a general correspondence between the fatality rates which obtained in the several hospitals at the different age periods. The figures with regard to the Lodge Moor and Ecclesall Bierlow Hospitals show the chief variations, but in the case of these hospitals the figures are very small. From the summary of the figures with regard to all the hospitals, it appears that the total of 1,798 cases of smallpox, 256, or 14.2 per cent., proved fatal. Of the total number of cases, 1,351 were of the "vaccinated" as against 447 of the "unvaccinated" class. Of the 1,351 persons of the "vaccinated" class admitted, 110, or 8.1 per cent., died; whilst of the 447 "unvaccinated" persons admitted, 146, or 32.7 per cent., died. Of the 1,351 persons of the "vaccinated" class admitted, 67 were under 10 years of age, and of these 1, or 1.5 per cent., died; 573 were aged 10 but under 20 years, and of these 13, or 2.3 per cent., died; 426 were aged 20 but under 30 years, and of these 42, or 9.9 per cent., died; and 285 were aged 30 years and upward, and of these 54, or 19 per cent., died. The whole of the persons of the "vaccinated" class who died had been vaccinated in infancy only, with one exception, and the figures show a greater liability to fatal termination with increasing years. Of 447 persons of the "unvaccinated" class admitted, 101 were under 10 years of age, and of these 34, or 33.7 per cent., died; 205 were aged 10 but under 20 years, and of these 56, or 27.3 per cent., died; 100 were aged 20 but under 30 years, and of these 41, or 41 per cent., died; and 41 were aged 30 years and upward, and of these 15, or 36.6 per cent., died. In the hospitals of course all the patients were under the same conditions; they were not being treated in different class houses, some in good ones and some in bad ones, but they were all being treated under the same nursing and with the same general surroundings, and, as I here note in the report, "except during the first few months of the epidemic, very few of the milder cases found their way to the hospitals, and consequently the proportions of severe and fatal cases were larger there than amongst the population as a whole." Then dealing in the same way with the fatality of the cases in hospital, taking all ages. Taking children aged 0-10: "For each individual vaccinated child 0-10 years of age suffering from a fatal attack of smallpox, 22.4 unvaccinated children died of that disease." Taking persons from 10 to 20 years of age: "For each individual vaccinated person, 10 to 20 years of age suffering from a fatal attack of smallpox, 12 unvaccinated persons of similar age died of that disease." Then as to persons from 20 to 30 years: "For each individual vaccinated person aged from 20 to 30 years of age suffering from a fatal attack of smallpox, 4.1 unvaccinated persons of similar age died of that disease."

(To be continued.)

SOCIETY PROCEEDINGS.

American Association of Obstetricians and Gynecologists.

Ninth Annual Meeting held in Richmond, Va., Sept. 22–24, 1896.

FIRST DAY—MORNING SESSION.

The Association was called to order at 10 A.M. by the President, Dr. JOSEPH PRICE of Philadelphia.

After the usual preliminary exercises, the reading of papers was proceeded with.

Dr. JOHN M. DUFF of Pittsburg, read a paper entitled

PELVIC DISEASES AND THEIR PRINCIPAL CAUSES; WHAT SHOULD THE LAITY BE TAUGHT CONCERNING THEM?

He said that notwithstanding the fact that some of the prominent members of the medical profession had, in talks to the galleries, held the gynecologists up for ridicule and criticised them severely, he did not think any apology was due either the profession or the public for the character, or results of pelvic surgeons. Those members of the profession who had been devoting themselves to the care of diseases peculiar to women, had in the face of revilings and professional and public prejudice worked patiently and persistently until they were now obtaining results of which they may well feel proud, results far beyond what the most sanguine expectations of the hardy pioneers of a quarter of a century ago led them to hope for. They were to-day charged with irrational radicalism, with an operative mania, which was gratified without a proper consideration of the ultimate benefit to the patient. Entreatingly they were urged to adopt more conservative measures, and thus stop the wholesale mutilation which was going on at present, which it is claimed is neither scientific nor humane. Sentiments such as these, endorsed by men of reputation, were eagerly taken up by the lay press as sensational news and advertised by pretenders as an endorsement of their methods of practice, and thus the laity, in the opinion of Dr. Duff, are taught false notions regarding the nature of pelvic diseases and their treatment. That there is a great amount of mutilation connected with pelvic surgery, he would not deny; but that regular pelvic surgeons were guilty of reckless despoliation was not, he thought, susceptible of proof. Pelvic surgeons could scarcely be held accountable for the work of general

practitioners; and for the work of ignorant egotists and pretenders, who with brazen effrontery undertake operations of which they are not qualified by character or education, the pelvic surgeons disclaim all responsibility.

During the period of the evolution and upbuilding of pelvic surgery no doubt much of the work was crude, and perhaps too much was done by over-zealous operators. That at this day, through mistaken diagnosis, operations are sometimes needlessly performed, no one would have the hardihood to deny; but that such cases are as frequent as some critics say they are, Dr. Duff could not believe. He said the true pelvic surgeon was governed by nobler purposes, by more elevated aims. Conservatism in its true sense, the saving of live, relief from pain and the curing of the patient, was his watchword. Dr. Duff then dwelt at length upon various pathologic conditions which demand the attention of the pelvic surgeon.

Dr. WALTER B. DORSETT of St. Louis, followed with a paper on

DECEPTIVE SIMILARITY OF SIGNS AND SYMPTOMS OF INTRA-ABDOMINAL DISEASE, WITH CASES.

In order to arrive at a conclusion and to formulate a diagnosis in a given case, be it medical or surgical, the practitioner must exercise care and judgment in the consideration of such signs and symptoms as are presented. Each should be weighed, and mental annotations taken as to their value individually and collectively.

Dr. Dorsett directed attention to the importance of the family and personal history of patients, to the pulse and temperature, the knoweldge to be gained by manual examination, the use of analgesics, etc.

Regarding the exploratory incision, it should not be regarded as an evidence of ignorance, but as a legitimate means of diagnosis, and the off-hand diagnostician, or the surgeon who never makes mistakes, should be looked upon with, at least, a grain of suspicion. To illustrate his statements, three interesting cases were reported, one of which we give in full:

Mrs. M., aged 28, married eight years, no pregnancies, was seen by Dr. Dorsett about a week after having recovered from an attack of malarial fever. Temperature 99, pulse 90, tongue slightly coated and a tendency toward diarrhea. Complained of general abdominal tenderness; palpation of abdomen revealed a slightly more tender spot at McBurney's point; no swelling or tumefaction could be felt. A vaginal examination revealed a retroversion with fixation, no tubal enlargement nor tenderness could be made out. No vaginal discharge. Diagnosis: Gastro-intestinal irritation with chronic inflammation of pelvic contents; diarrheal mixture was prescribed and patient was told that further attendance would probably not be necessary. Four days subsequently the temperature was 99.8 F., pulse 100, abdominal palpation revealed a distinctly tender spot with some swelling at McBurney's point. Patient stated that she had eaten heartily of Wienerwurst the day before, and had been awakened during the night by cramps at the navel. Bimanual examination was again resorted to with negative result. Appendicitis was diagnosticated at this visit, first stage. Dram doses of salts were prescribed, and the patient was urged to go to the hospital, but refused. The next day she was seen and found sitting in a rocking chair, and aside from slight tenderness over abdomen, was feeling quite comfortable. Salts acted freely. Bimanual examination again gave negative results; temperature 99, pulse 100. Patient was ordered to bed and advised to keep quiet. The case was regarded as better and thought to be out of danger. The following day the pain became more severe and the patient came to the hospital of her own accord. Upon examination the right iliac fossa was found to be exceedingly tender and fluctuating. Vaginal examination revealed nothing aside from what was found at the previous examination. Temperature 103, pulse 130. Diagnosis: Ruptured appendiceal abscess. She was anesthetized and placed upon the table and a section made in the median line. The large sac was found on the right side filled with blood and clots, and when washed out a rent of the posterior layer of the broad ligament was found which communicated with another rent in the Fallopian tube. Appendix perfectly healthy, and was not disturbed. A thorough washing out of the sac was done and ligation of the tube with a portion of the broad ligament, a glass drainage tube was introduced. Notwithstanding the utmost care, the temperature remained high, pulse became worse, the abdomen became distended, and the patient died on the third day.

Postoperative diagnosis: Ruptured tubal pregnancy without the usual symptoms. There was no history of shock; no cessation of menstruation, or nervous symptoms of pregnancy. No passage of decidua; no vaginal discharge of any kind, but in its stead a good history and train of signs and symptoms of inflammatory disease of the appendix.

Dr. RUFUS B. HALL of Cincinnati read a paper entitled,

THE MOST POTENT CAUSES OF PELVIC INFLAMMATION.

He claimed that septic infection following labor or abortion or gonorrheal infection, was the cause in almost every instance. He says there will always be some cases of septic infection following labor, which are in nowise due to infection from the attendant, injury to small pelvic tumors, etc. The retention of the products of conception in abortion is a very frequent cause. He advises completely emptying the uterus at once after abortion. The Doctor believes the most frequent cause to be gonorrheal infection conveyed to the woman from a latent gonorrhea of her husband. The more he sees of the ravages of gonorrhea, the more he is convinced of the fact that the profession is derelict in its duty to its patients in the dissemination of knowledge upon this subject. The teaching of a few years ago that gonorrhea in the male could be easily and speedily cured by a little balsam of copaiba, or oil of sandal wood, with mild astringent injections, and that the patient was well as soon as the purulent discharge ceased, is false doctrine and must be corrected. This must be done by the family physician. Dr. Hall does not stand alone when he says that he has on many occasions been compelled to remove suppurating tubes and ovaries from women who had contracted the disease from their husbands, who believed themselves well when married. He has no hesitation in saying that gonorrhea is more destructive to women than syphilis, and believes it is the duty of every physician to impress upon his male patient the fact that he is not well as soon as the urethral discharge disappears. He is a firm advocate of legislation upon this, believing that every man should have a certificate from the health officer of freedom from syphilis and gonorrhea before he is granted a marriage license.

Dr. HENRY CARSTENS of Detroit in discussing the three preceding papers, said that when prominent ministers of churches consulted physicians and asked them to produce abortion on their wives he became discouraged, and thought it was love's labor lost. Still the gynecologist should keep on preaching against the evils attending the production of abortion. Regarding Dr. Dorsett's paper, the difficulty attending diagnosis in some cases was exceedingly great. The gynecologist should exhaust his diagnostic resources before resorting to abdominal section. The too frequent opening of the abdomen stimulated incompetents to do likewise, and as a consequence results were disastrous, eventually reacting on gynecologists.

Dr. W. E. B. DAVIS of Birmingham, Ala., does not believe that gonorrhea plays so important a part in the production of pelvic inflammation as was heretofore taught. One's conception of cases of pelvic trouble depends largely upon the class of practice he has. The cases met with in dispensary practice are different from those encountered in private work. He believes that fully 50 per cent. of the cases of pelvic inflammation are due to puerperal infection, either at the time of delivery at full term or premature delivery. As to tubercular trouble, more importance is being attached to it as a cause of pelvic inflammation than it deserves. Those who did considerable operative work knew that only a small per cent. of cases have their origin in tuberculosis.

Dr. JAMES MCFADDEN GASTON of Atlanta (by invitation) called attention to the prophylactic management of cases of pregnancy prior to the period of confinement. Extreme hygienic precautions might warrant in some instances the use of antiseptic washes prior to labor, but as there was a great tendency on the part of some members of the profession to resort to measures which are regarded as precautionary in the way of preparing a woman for labor and using washes in advance of confinement, it struck him this was altogether out of place, inasmuch as there was a normal condition of things, and nature should be allowed to take its course unless there were ample reasons for interference.

Dr. ERNEST S. LEWIS of New Orleans cited a case in connection with errors that sometimes arise in the diagnosis of abdominal tumors. He operated on a patient last winter for what he supposed at the time was a small ovarian tumor, but after the abdomen was opened it turned out to be a retroverted gravid uterus.

Dr. F. D. THOMPSON of Fort Worth, Texas, would like the essayists to have gone more fully into the point as to when it was safe for men to marry and have intercourse with their wives, who had been the subjects of gonorrhea. Many cases of gonorrhea occurred in married men, and the gynecologist had before him all the ills and consequences incident to this disease. How long shall such men abstain from sexual intercourse? These points should be dealt with more fully and explicitly.

Dr. LEWIS S. MCMURTRY of Louisville considered the view enunciated by Dr. Hall as to gonorrhea and its relations to

marriage impracticable. Regarding the exploratory incision for diagnostic purposes, a small opening was not always sufficient. The incision should be sufficiently large to allow the surgeon to thoroughly explore the abdominal cavity to detect such pathologic conditions as might be present.

Dr. L. H. Dunning of Indianapolis cited cases of the impracticability of making a small incision for the detection of intra-abdominal pathologic conditions. He favors an exploratory opening sufficiently large to make a thorough search.

Dr. A. H. Cordier of Kansas City, Mo., said, regarding the possibility of making diagnoses in intra-abdominal pathologic conditions, that in 80 per cent. of the cases this could be done by painstaking efforts.

Dr. Edwin Ricketts of Cincinnati agreed with the previous speakers that it was exceedingly difficult to diagnosticate intra abdominal lesions previous to opening the abdomen, and sometimes the surgeon did not know the nature of the growth even after the abdomen was opened. Cases illustrating the great difficulty attending diagnosis of intra-abdominal growths were cited.

Dr. E. F. Fish of Milwaukee said that while he did not believe in promiscuous exploratory laparotomy, he could recall one case in particular in which the operation saved the patient's life.

Dr. Richard H. Gibbons of New York City thought many of the cases dealt with in the papers were due to puerperal contamination, or in some instances to laceration of the cervix, as had been pointed out by Emmet. He believes that Noeggerath gave us the keynote to the class of infection produced by gonorrhea. Relative to diagnosticating intra-abdominal diseases, there was no particular symptom that was pathognomonic. Dr. Gibbons pointed out the unreliability of McBurney's point, of which so much had been said and written, and called attention to an article written by him and published in the *New York Medical Journal*.

Dr. Howard W. Longyear of Detroit emphasized the importance of educating the laity in regard to gonorrhea. He believes the teachers of our public schools should be empowered to impart the necessary knowledge regarding the dangers of this disease and its consequences.

Dr. George Ben Johnston of Richmond presented the specimen of an ovarian tumor, the first removed under Listerism in the State of Virginia so far as he had been able to ascertain. The patient was an unmarried woman, 26 years of age. The tumor was removed March 19, 1879. The tumor with the sac and fluid contents weighed thirty-four pounds. The operation was performed under the spray and with the elaborate dressings recommended by Lister, etc. The patient died, however, from sepsis. In November of the same year he was consulted by Mrs. M., whom he presented to the Association for what turned out to be an enormous unilocular ovarian tumor. Her measurements were 6 feet, 4 inches around the abdomen at the umbilicus, and 3 feet, 2 inches from the ensiform cartilage to the pubes. The contents of the tumor and sac weighed ninety-six pounds. This operation was performed at the patient's house with the same care as that of the previous one.

TUBO-OVARIAN CYSTS WITH INTERESTING CASES.

Dr. Albert Goldspohn of Chicago read a paper on this subject. By tubo-ovarian cyst is meant a non-purulent sac whose walls are composed, in variable proportion, of the walls of the Fallopian tubes and those of some cystic ovarian or parovarian formation with the coalescence of two or more cavities, at least one from each, into one, by a free communication. The fluid contents of such a sac may be serous or hemorrhagic, or may partake in variable degree of the qualities and characteristics of the fluid contained in glandular ovarian cystomas. The fimbriæ of the abdominal ostium of the tube may be distinguished or not upon the inner or on the outer side of the ovarian portion of the sac, or they may have coalesced with other structures to form some portion of the walls of the united sac. The ovarian element in this formation can have originated from a hydropic Graafian follicle, a cystic corpus luteum, from the primordial glandular ducts of Pflueger in the ovary, or from the parovarium. In order to exclude a large number of ordinary tubo-ovarian conglomerates we need to recognize the following minimum requirements in distinguishing a tubo-ovarian cyst: 1, the participation of the tube, which is easy enough from its position and connections; 2, to prove the participation of the ovary by demonstrating some ovarian tissues in the wall of the sac; 3, that their cavities are united by some opening through which the mucous membrane of the tube is continuous with the lining of the ovarian cyst or follicle. Applying this standard the author has been compelled to exclude a number of cases that have been mentioned as such cysts, because the three points were not proven in each of the cases.

The first description of a tubo-ovarian cyst was given by Blasius in 1834, but the correct name was proposed by Richard in 1853, who spoke of "kysts tubo-ovariens" in demonstrating a number of postmortem specimens. The total number of authenticated cases that the author has been able to find in literature is thirty-eight by twenty-five different authors. Dr. Goldspohn reported three interesting cases, and called attention to some interesting features in connection with the anatomy as influencing intermittent profluent discharges and showing the inflammatory element in their causation. From a study of specimens, from the results of experience, and from the arguments of the best authors, the author deduces the following conclusions:

1. Tubo-ovarian cysts come to pass in consequence of a plastic inflammatory union between a Fallopian tube and the adjacent ovary, after either or both of these organs and the intervening peritoneum have experienced a non purulent pathologic change of a cystic character. The septum intervening between the two lumina disappearing in consequence of pressure atrophy from the tension of liquid confined to one or both sides of it.

2. This union of a distended tube cavity may occur also with that of a parovarian cyst (v. Ott), or with that of a peritoneal pseudo cyst (Zedel).

3. In those rarer cases in which the fimbriæ are really found floating in the interior of the main cyst cavity, we must assume either the congenital anomaly of an "ovarian tube," as was seen by Schneidemahl in a mare, as a vitium primæ formationis, or that an ovarian cyst or follicle cyst ruptured, and the abdominal end of the tube dropped into the rent and was united to its edges by inflammatory action, thus making a joint cyst and tubal cavity.

Dr. Walter B. Chase, of Brooklyn, followed with a paper entitled

MIXED TUMORS OF THE OVARY.

Mixed tumors of the ovary have a peculiar interest, for the reason that, if small, they are often difficult of diagnosis. These tumors of the ovary may be made up of a variety of cysts, or may be a combination of cysts and solid growths. The etiology of tumors as a whole is a matter of great importance, both in the relation to diagnosis and treatment.

The question of what constitutes a tumor might be considered with profit. Senn, in his recent classical work on the "Pathology and Surgical Treatment of Tumors," defines a tumor as "a localized increase of tissue proliferation of embryonic cells of congenital or post-natal origin." An important fact concerning true tumors is that they never disappear except by removal or destruction. Benign tumors always remain local, while malignant ones are disseminated by migration or transportation of their peculiar cells, and they always originate as benign or malignant growths. If the tumor matrix is made up of embryonic cells of the lowest development, there is greater liability to malignant growth, than if from tissues susceptible to the highest physiologic type of development.

Retention cysts of the ovary are not tumors in a technical sense, and they never attain large size. Large ovarian cysts are most often cyst-adenomas and are not developed from Graafian follicles, but arise from the embryonic structure.

It would seem from what has been said that the genesis of simple and mixed tumors is divested of much that was misleading and contradictory and reduced to a rational basis. It also demonstrates with great clearness that tumors are not only of local origin, but at their inception are congenital.

The case reported, which was operated upon by the author at St. John's Hospital, Aug. 4, 1894, as reported by Dr. H. P. De Forest, pathologist to the Methodist Episcopal Hospital, was a mixed tumor of the left ovary, consisting of a large cyst-adenoma, containing about two gallons of clear straw-colored fluid, a dermoid intimately united with the cyst-adenoma, containing less than a quart of fluid, leaving true bony plates in its wall, and numerous encysted papillomas encrusted within the walls of both cysts.

Afternoon Session.

Dr. A. H. Cordier of Kansas City, Mo., read a paper on

MOVABLE KIDNEY; LOCAL AND REMOTE RESULTS

in which he drew the following deductions: 1. A movable kidney often produces a dilatation of the stomach with all the accompanying symptoms of a disease of that organ. 2. It is a fruitful source of gallstones, because of the pedicle producing a partial obstruction of the common duct. 3. The bending of the ureter often gives rise to a hydronephrosis. This, in turn, is sometimes converted into a pyonephrosis. 4. It may pro-

duce death by a complete strangulation by a torsion of the vessels and ureter. 5. By dragging on the abdominal aorta and kinking the vena cava, a condition simulating an aneurysm of these vessels may be produced. 6. Pain of a referred character to the region of distribution of the spinal nerves is often induced by a movable kidney's disturbance of the abdominal plexus. 7. A general nerve exhaustion (neurasthenia) is often induced by the interference of this condition with digestion, assimilation and elimination. 8. Nephrorrhaphy is a safe and effective surgical procedure. 9. All cases of movable kidney, if accompanied by symptoms pointing to the kidney as their source should be operated on. 10. In summing up the local and remote results of this now often recognized condition, the author thinks the correctness of the deductions has been frequently demonstrated by the disappearance of each and every symptom after a restoration and retention of the kidney in its normal position. 11. Symptoms are not to be relied upon in making a diagnosis of movable kidney. The physical examination is the only trustworthy guide.

THE LIMITS OF NEPHRORRHAPHY

was the subject of a paper by Dr. HUGH M. TAYLOR of Richmond, Va. He conceded the frequency of nephroptosis. Since he had been systematically looking for movable kidney, he has found it so frequent in its occurrence that he no longer regards the experience of Glenard, Linduer, Edobohl and Noble as unique. His opinion is equally fixed that only a small proportion of the cases met with give rise to symptoms or suffering, ill health or death, and consequently a majority of cases do not call for nephrorrhaphy. He favors the classification of nephroptosis under three clinic heads:

1. Patients who have displaced kidney do not know it and suffer no inconvenience whatever from it. This type he thinks represents by far the largest class.

2. Patients with displaced kidney, who may or may not know it, who suffer from gastro-enteric discomfort and perhaps a long train of vague neurotic disturbances. In this type he thinks we find the largest class calling for operative interference.

3. Patients with movable kidney, who are subjects of occasional or frequent mild or severe attacks of renal crises. This last mentioned is he thinks the least frequent type met with, but the urgency of the symptoms more frequently demands operative interference.

Nephrorrhaphy for the relief of gastro-enteric disorder is limited by our ability to tell to what extent the disorder is due to renal ptosis per se or to enteroptosis, or to some one of the many well-known etiologic factors of gastro-enteric disorder. Nephrorrhaphy for the relief of the condition of Deitl's or renal crises must be limited by one's success in differentiating between this condition and that of gall tract, appendicular and kidney colic due to nephrolithiasis. He accepted as logically sustained the conclusion that the Deitl's or renal crises is due to a kink or twist of the ureter with retained urine in the ureter and pelvis of the kidney. Apart from the violent paroxysms of pain (the renal crises) the tendency of ureteral twist and urinary obstruction to induce hydronephrosis and in exceptional instances pyonephrosis, rendered operative interference more imperative in this class of cases. His protest was not against nephrorrhaphy, but only its abuse. He conceded the value of operative interference in many selected cases but deprecated the tendency toward operative interference merely because the kidney is movable.

Dr. GEORGE BEN JOHNSTON of Richmond, Va., said that some years ago his attention was called to the subject by encountering several cases of movable kidney that had been unobserved either by him or the physician who preceded him in the treatment of these cases for obscure nervous and gastro-intestinal disturbances, and when he observed the similarity of symptoms in the first three cases which he saw, he was obliged to associate those symptoms with the presence of movable kidney. He prevailed on these women to be operated upon for movable kidney and in all three cases the results were most gratifying.

Dr. L. H. DUNNING of Indianapolis, was greatly interested in the subject, for the reason that in 1880 he resorted to operative procedures for the cure of floating kidney, and in connection with this work he sought to determine if possible some of the causes which led to movable kidney. He emphasized the importance of differentiating between floating and movable kidney, the former being always congenital, the latter acquired to a greater or less extent. He found by his investigations that the partially fixed condition of the kidney depends upon three or four causes, the two principal ones of which were its position behind the peritoneum, and second the fact that it had an envelope of cellulo-adipose tissue. A little further investigation showed that the perinephritic cellulo-adipose tissue was composed of two parts, one fixed, the other movable. The normal kidney had a range of motion of from one-half to three-quarters of an inch in its fatty envelope.

Dr. THOS. B. EASTMAN of Indianapolis, reported the case of a woman, 25 years of age, who came to him with the symptoms of appendicitis. She also had considerable albumin in the urine. Operation showed that the appendix was firmly adherent to the kidney. It required considerable force to liberate it. As soon as liberated the kidney bounded back into place as though it were rubber. The appendix was removed, the albumin in the urine ceased, and the woman made an uneventful recovery.

Dr. JAMES MCFADDEN GASTON of Atlanta, directed attention to the possibility of movable kidney being mistaken for enlarged gall bladder. The gall bladder is capable of being pushed back into the lumbar region and carried around in front in just the same manner as a floating kidney. It behooved gynecologists to look into this phase of the matter.

Dr. W. E. B. DAVIS of Birmingham, had seen a number of cases of movable kidney, and said that at the Charleston meeting of the Southern Surgical and Gynecologic Association there was quite a difference of opinion as to the frequency of the condition. He believes that movable kidney is a condition which does not require in all cases operative interference. Of the number of cases he had seen he had only operated on a few.

Dr. I. S. STONE of Washington, D. C., related the case of a woman who, after the operation of nephrorrhaphy had been performed, gained twenty-five pounds in flesh. In many instances this procedure brought color back to the cheeks of patients and made them feel well. He had never seen such gratifying results from any other operation in surgery except perhaps from the removal of an ovarian tumor. The patients made rapid improvement after the operation.

Dr. JOSEPH PRICE of Philadelphia, said his experience was somewhat limited in operating for movable kidney. The improvement in the condition of patients so operated upon was rapid, but there was such a thing as operating too much upon cases of movable kidney.

Dr. J. HENRY CARSTENS of Detroit, said the line should be drawn between movable and floating kidney. The trouble which arose from floating kidney consisted of a twisting of the ureter and consequent obstruction.

Dr. RICHARD H. GIBBONS of New York, detailed an operation which had been devised and recommended by a foreigner for holding the kidney in place in its newly made position.

TREATMENT OF PERIUTERINE SEPTIC DISEASES.

Dr. W. E. B. DAVIS of Birmingham, Ala., read a paper on this subject. Only recently has the extremely radical procedure of hysterectomy been practiced in this country for septic diseases of the internal genitals. A wave which had its origin in Paris at the hands of Péan, aided by Richelot, Segond, Jacobs and others, reached our shores three years ago and has found a considerable following among our leading operators. The claim is made that there is no use in leaving the uterus behind after the removal of the appendages; in every operation for septic diseases of the female generative organs which demands the removal of the tubes and ovaries, hysterectomy should also be performed, unless there are plain contraindications forbidding it.

It should be the aim of the surgeon to preserve everything consistent with thorough surgical work, and not to sacrifice important organs because it can be done with only small mortality. We are told that the uterus has no function after the removal of the appendages, but this has not been demonstrated, and on the contrary we know that the sexual life of the woman is very much better preserved by leaving the uterus, and that the mental effect is also much better. A slow convalescence, or even a second operation is preferable to its removal unless very much diseased. It is a reflection on the correctness of the reports of complete recoveries of such a large per cent. of the cases by most excellent surgeons, when the uterus was not removed, to accept the argument now being made in favor of hysterectomy in all these cases. As stated by Dr. Davis at the last meeting of the AMERICAN MEDICAL ASSOCIATION, he could not agree with Dr. Sutton and others that pus in the tubes was due to gonorrhea in 75 per cent. of cases. He thought that puerperal infection was rarely the cause of more than 50 per cent. Tubercular infection was rarely the cause and was not so important as he claimed. However, the importance attached to gonorrhea was against the argument for the removal of the uterus, as the infection from this source was not deep and could be removed with the curette. Because some patients were not completely cured by the removal of the appendages was no argument for hysterectomy in every case where the bilateral operation was required; for nearly all these could be

relieved by a thorough curettage. Some large uteri would require in addition to this a high amputation of the cervix, and only a small number would need a hysterectomy.

Vaginal incision for the drainage of pus in the pelvis, not confined to the tubes, was a most valuable method of treatment in a well-recognized class of cases, and had been practiced for a long time with gratifying results. A large number of these cases require no further surgery. More recently large pus tubes and ovarian abscesses had been incised and drained through the vagina with permanent recoveries in a good proportion of cases. The uterus should always be curreted at the same time. These were the very cases where the vaginal operation and hysterectomy had been recommended so highly by the French surgeons. Yet a considerable per cent. of these cases could be relieved by vaginal incision and drainage. The object of the surgeon should be, not so much toward still further reducing the death rate from the operation, but to relieve the cases and preserve as far as possible organs which had so much to do with the woman's health and happiness.

Dr. L. H. Dunning of Indianapolis followed with a paper entitled

SHALL HYSTERECTOMY BE PERFORMED IN INFLAMMATORY DISEASES OF THE PELVIC ORGANS.

The author discussed only that form of inflammation of the pelvic organs and tissues denominated diffuse pelvic inflammation, and drew the following conclusions:

1. We recognize the utility of hysterectomy in a small percentage of bilateral suppuration of the tubes and ovaries in which the uterus is distinctly septic, and in cases of septic uteri which can not be cured by other means after bilateral salpingo-oophorectomy.

2. We oppose hysterectomy as a rule in inflammatory diseases of the pelvic tissues upon the following grounds, viz.: (*a*) The uterus is the central organ of the reproductive system and should not, except upon palpable and urgent cause be extirpated. (*b*) It is only in rare cases that the uterus is so far diseased as to resist the curative effects of appropriate treatment. (*c*) The removal of the uterus profoundly affects the nervous system and emotional nature of young women deprived of this organ. (*d*) We oppose the removal of the uterus from anatomic reasons, to wit: As a result the vagina is shortened, the anatomic relations of the bladder, sigmoid and rectum are changed, the elasticity of the pelvic diaphragm is greatly diminished or entirely removed, the elastic tissue being largely replaced by sensitive scar tissue. (*e*) In married women it often disturbs the sexual relations of husband and wife and is apt to induce mental depression. (*f*) Vaginal hysterectomy compels the use of drainage because of the necrosis of tissue and suppuration induced.

SHALL THE UTERUS BE LEFT IN SITU IN EXCISION OF THE ADNEXA?

This paper was read by Dr. E. F. Fish of Milwaukee, Wis. The paper was a general defense of the uterus and an argument in favor of leaving it in situ, if sound, after excision of the appendages. It takes up and considers the pathologic conditions requiring hysterectomy after salpingo-oophorectomy, as well as the conditions which do not require it. The author argues against all operations which leave a degenerate uterus, such as Hegar's, Tait's, Martin's and Robinson's, except under extreme conditions, and concludes thus: 1. That whenever it becomes necessary to excise the uterine adnexa, if the uterus is sound, leave it. 2. Whenever we excise the tubes and ovaries, and the uterus, though in a pathologic condition, in our judgment will yield to treatment, leave it. 3. Whenever it is necessary to do an abdominal hystero-salpingo-oophorectomy and the cervix is healthy, do a supravaginal amputation, as this leaves the vaginal vault intact. 4. Whenever it is necessary to do a supravaginal amputation, suspend the cervix to the stumps of the broad ligaments, or anchor it to the abdominal wall to prevent prolapsus vaginæ (Baldy). 5. Whenever it is necessary to do a general ablation, and the cervix uteri is unsound, take the entire organ because of the danger of carcinoma. 6. Whenever a subserous or interstitial myoma can be removed without too great damage to the uterus, do a myomectomy and leave the organ. 7. Whenever we excise the appendages and leave the uterus, ventral fixation is not an unsurgical operative conclusion.

The author's reasons for leaving the uterus were: 1. That it helps to maintain the woman's sexual integrity. 2. It relieves the patient of much mental strain and is a prophylactic measure to neurasthenia, melancholia and insanity. 3. It tends to maintain the family ties unstrained. 4. It obviates the possibility of vaginal hernia, cystocele and proctocele, and delays vaginal atrophy, and last of all, it holds up and prevents shortening of the vagina.

A spirited discussion followed the reading of the above there papers, and was participated in by Drs. L. S. McMurtry, John M. Duff, Joseph Price, J. Henry Carstens, Albert Goldspohn, George H. Rohé, James F. Baldwin, A. B. Miller, Walter P. Manton, J. W. Bovee, Rufus B. Hall, W. E. B. Davis, E. F. Fish; some favored the abdominal and some the vaginal route.

SECOND DAY—MORNING SESSION.

Dr. J. W. Long, of Richmond, Va., contributed a paper entitled

DYNAMIC ILEUS.

Intestinal obstruction had been variously classified, but Dr. Long regarded the classification adopted by Murphy as the simplest and the most rational: 1. Adynamic ileus, always the result of intestinal paralysis, due to varying causes, may be clearly illustrated by such cases as those following injury to the spinal cord and paralysis due to peritonitis. 2. Dynamic ileus. This variety formed the subject of the paper and was discussed in detail. 3. Mechanical ileus embraced such common lesions as strangulated hernia, intussusception, fecal impaction, etc.

We report one of Dr. Long's cases herewith. Mrs. C., was brought to him on May 27, 1896. She is 21 years old, married three years, but never pregnant. She is rather below the medium size and height. In temperament she is of the spoiled child type, not hysterical but rebellious. It was with great difficulty that she could be induced to have any local treatment or even take her medicines. After admission to hospital her obstreperous disposition required all the tact and firmness of a sagacious nurse. Early in April of this year the patient had malaria followed by delayed menstruation, pelveo abdominal pain and obstinate constipation. The malaria and menstrual disturbance yielded promptly to treatment, but the abdominal pain continued and gradually the ileus symptoms became more and more pronounced. After exhausting every other measure to move the bowels the patient was given chloroform and by means of a Rickett's tube he succeeded in washing away a quantity of fecal matter. Notwithstanding there was no improvement, the nausea and vomiting recurred oftener and were more distressing, the pain and tenderness became worse and a marked degree of tympany supervened. When she was brought to the hospital there had been no movement of the bowels for four weeks excepting what was washed away with the colon tube while the patient was anesthetized. The history justified the diagnosis of intestinal obstruction, while the urgent symptoms demanded an immediate operation. The abdomen was opened by a median incision. No mechanical obstruction could be found, although a careful search was made along the whole length of the intestine. The bowel was moderately distended with gas and congested. A singular feature, however, was that at three points, two in the ileum and one in the sigmoid flexure, the canal was constricted sufficient to constitute obstruction. In the ileum one of the constrictions was about 15 inches from its lower end and 6 inches long, the other was nearer the jejunum and about 4 inches long. The lumen was not entirely closed at either point, but was greatly reduced, being less than half the normal size, while the diameter of the remaining portions of the bowel was increased on account of the distention with gas. No peristalsis was observed, but the contracted portions could be dilated by "milking," the intestinal contents along. In the sigmoid the limitations of the contracted portion were not so sharply defined, but the lesion was just as evident. The walls were thickened and the caliber much diminished. Incidentally a small ovarian cyst on the right side was discovered and removed. As the intestine had been handled a good deal the abdomen was flushed with normal salt solution. The incision was closed with two tiers of sutures, silk for the peritoneum, and interrupted silver wire for the remaining layers. The recovery was most satisfactory in every way. The bowels responded to the usual laxatives and enemas on the second day, and from the first to last there was not a hitch in her convalescence. The patient left the hospital in four weeks, and three weeks thereafter took a trip to Alabama. There could be discovered no evidence of lead, or ptomain poisoning.

SPONTANEOUS RUPTURE OF UTERUS DURING LABOR AT TERM, WITH SPECIMEN.

A paper on this subject was read by Dr. B. M. Hypes, of St. Louis.

Mrs. O., aged 31, of German parentage, general health good, previous to birth of first child. No history of any constitutional disease. About one year after marriage, aged 26 years, was delivered of a seven and one-half months child, which lived but a few minutes. This labor was easy, lasting about six hours. The midwife in attendance failed to get the after-birth,

which was removed by the family physician twenty hours after the birth of the child by means of his hand and the curette. The woman then suffered for six weeks with a severe case of metro-peritonitis. From this time her health remained impaired, and for the next few years she was a sufferer from generul debility, impaired digestion, and a "sore spot" in the hypogastrium. Four years from the birth of her first child she again became pregnant. During gestation, her general health was much improved. She exhibited no functional disturbances; her only complaint was the sore spot over the fundus of the uterus and to the right of the median line. Labor pains began Sept. 16, 1895, at 10 P.M., at full term. The family physician was called; found labor in progress, vertex presentation, with normal condition of mother and child. The pains were slight and progress slow. At 2 A.M., September 17, he gave a dose of morphin and went home. At 9 A.M., upon his return he found the patient comfortable, with occasional slight labor pains. He left the house with injunction to call him when signs of labor became pronounced. Patient remained quiet during the day. Suddenly at 3 P.M., she was seized with violent vomiting, followed by the most excruciating pains in her abdomen associated with rolling and tossing in bed, gasping for breath, faint feelings, pallid face and rapid exhaustion; in short, the usual symptoms of abdominal shock. The family physician was at once sent for and upon his arrival, at 4 P.M. found her in complete collapse, with convulsive seizures. The symptoms, with vaginal and abdominal examination, revealed to him this dreadful condition: The presenting part receded, the womb empty, and the child plainly felt in abdominal cavity. The patient had suffered spontaneous rupture of the uterus. He at once dispatched for surgical aid, but by the time the surgeon, Dr. Meisenbach, arrived, the patient was moribund. Still with the hope of saving the child, laparotomy was hastily performed, and the child, which had escaped entirely into the abdominal cavity, was extracted from a mass of blood and amniotic fluid. It had ceased to live, and continued efforts at resuscitation failed to cause it to breathe. The child was fully developed, male, weighed six pounds, and was 18 inches long. The uterus, when removed from body, presented the following condition: A rupture through fundus superiorly, extending from half an inch from the entrance of one tube to an equal distance from the entrance of the other; the walls, at place of rupture, were comparatively thin. Placenta located at middle third of uterus, anteriorly and to the right, where the walls were much thickened. Vaginal portion of the cervix almost obliterated as at term, and dilated for the ready admission of two fingers. The lower zone of the uterus exhibited no thinning or formation of Bandl's contraction ring; no disease of tubes, ovaries, or placenta. A microscopic examination was made soon after rupture and revealed fatty degeneration of tissue at point of rupture. The points of unusual interest in the case are the cause of the rupture, and its location at the fundus uteri.

Dr. EDWIN RICKETTS of Cincinnati, Ohio, read a paper entitled

PORRO'S OPERATION AT OR NEAR THE FIFTH MONTH FOR SMALL FIBROID OF CERVIX, ACCOMPANIED BY HYDRAMNIOS AND TOTAL RETENTION OF URINE.

The author reported the following case and briefly commented on it:

Mrs. M., white, aged 26, of short stature, mother of two children of 6 and 3 years of age, with an abortion at 8 weeks early in 1895, no specific history, and a patient of Drs. J. B. and C. M. Warwick, of Lucasville, Ohio. Drs. Warwick first saw her on Jan. 10, 1896, finding that she menstruated last in the first week of November, 1895. They also found the uterus enlarged and firmly bound down in the pelvis, especially to the left, and extremely tender to pressure. There was uterine hemorrhage in March, 1896, and again in the following month lasting for twenty-four hours. Her labors and abortion were prolonged and severe and accompanied by great suffering, while dilatation in all instances was accomplished with difficulty. From Jan. 10, 1896, she had no desire to urinate, nor could she void a drop of urine without the aid of the catheter. Feb. 23, 1896, she had severe labor pains lasting thirty-six hours and accompanied by slight hemorrhage, the right portion of the cervix being soft and the left hard, which condition was also present at the time of operation. During April and until May 22, the date of operation, she was very tender over the lower part of the abdomen, and at times had a temperature above 100, with a pulse running from 90 to 100.

Dr. Ricketts saw her in consultation at her home April 8, 1896, when for the first time motion of the fetus was barely perceptible. May 22, Drs. Warwick, Kline, Sellards and Ricketts found her abdomen larger than it should be at full term, which was due to the hydramnios present. There was no difficulty in moving the fetus freely in the abdominal cavity, so thin was the uterine wall. It was considered unwise to delay surgical interference, and a Porro was therefore performed under as strict asepsis as the circumstances would permit.

After the abdomen was opened, Dr. Ricketts passed his hand down into the pelvis breaking up the pelvic adhesions. Upon the delivery of the fundus of the impregnated uterus through the abdominal incision, a rubber ligature was thrown around it low down and tight enough to control any hemorrhage which might occur. The fluid which escaped upon opening the uterus surpassed in amount any he had seen delivered per viam naturalem. After carefully sponging the parts, the wire was tightly adjusted below the rubber ligature by means of the Koeberle clamp, and the rubber ligature then removed. After the delivery of the placenta, the fundus was amputated, leaving the ovaries and tubes intact. The abdominal wound was closed with silk worm gut sutures, without stitching any tissue to the stump below the wire. No drainage tube was used. The extra-peritoneal part of the stump was dressed with gauze, moistened in glycerin and tincture of iron, the stump being held up by the double-hooded pin of Tait. The placenta and fetus were small for near five months gestation, and the cord was tied in almost a hard knot, harder than any he had seen. The fetus had marked cyanosis and gasped but once. Recovery of the mother was satisfactory.

TREATMENT OF PUERPERAL INFECTION.

Dr. H. W. LONGYEAR of Detroit, read a paper on this subject. He first spoke of the prophylaxis and under this head of the difficulty of securing reliable statistics regarding puerperal mortality of patients under the care of midwives in this country. The prophylaxis was divided into general and specific. He spoke of the treatment of infection from abortion and from childbirth at full term, and presented an instrument for use in removing the remains of secundines from the uterus, designed by him. He also exhibited a self-retaining drainage tube of his own invention and demonstrated its applicability. He reported two cases of puerperal infection treated successfully by the use of diphtheria antitoxin serum. He condemned the performing of hysterectomy for puerperal septicemia except in very exceptional cases.

(*To be continued.*)

The American Public Health Association.

[Special Correspondence of the JOURNAL.]

The Twenty-fourth Annual Meeting of the American Public Health Association held at Buffalo, N. Y., Sept. 15–18, 1896.

(*Continued from page 756.*)

WEDNESDAY—MORNING SESSION.

After the customary announcements by the chairman of the Local Committee of Arrangements, the daily report of the Executive Committee was made by the Secretary presenting the names of forty additional applicants recommended for membership, who were thereupon elected.

The roll of the Advisory Council, which consists of one member from each State, Territory, the District of Columbia, the Army, Navy and Marine-Hospital Service of the United States, the Dominion of Canada and each of the Provinces, and from each state, territory and the Federal District of the Republic of Mexico, eighty-one in all, was then called and vacancies filled by the President.

The scientific work of the day began with the reading of the Report of the Committee on Disposal of Garbage and Refuse by the chairman, RUDOLPH HERING, C. E. of the City of New York. The elaborate nature of this admirable exhaustive report precludes any epitome giving a correct idea of the subjects of inquiry. Cities were considered in three classes: 1, the large, those over 100,000 population; 2, the medium, those numbering between 40,000 and 100,000; and 3, the small, those under 40,000—and the various methods of disposing of garbarge in each, whether by cremation, by filling in and ploughing into the land, by dumping into the sea, lakes or rivers, or by being fed to animals, were considered with reference to cost and satisfactory results. The cost ranged from 75 cents to 2 cents per capita, according to population and the method of disposal. The reduction process in use in about ten cities varied from 15 to 67 cents per capita. Regarding cremation, the expense was, in large cities from 2 to 6 cents, medium cities 6 to 10, and in one small city 20 cents. During the past year, contracts have been made for the introduction of crematories and one reduction plant in New York City, at a cost of $90,000 or 6 cents per capita. The committee have been awaiting final

results from experiments in Berlin and Hamburg before arriving at definite conclusions, and, therefore, asks to be continued.

Papers followed on the "Disposal of the Garbage and Waste in the Household" by Colonel William F. Morse of the city of New York: another entitled "A Plea for the Domestic Disposal of Garbage," by Dr. N. E. WORDIN of Bridgeport, Conn., member of the State Board of Health of Connecticut, and on "The Disposal of Household Garbage and Excrement," by Major WILLIAM S. TREMAINE, of the Medical Department of the U. S. Army (retired). They were all based on the drying, cleaning or combustion of waste by the kitchen range or attachments to the stovepipe. This group of papers elicited a very lively discussion, participants being limited rigidly to five minutes. Dr. GIHON, U. S. Navy, began by suggesting the proper way of disposing of at least one-half the garbage was to eat it instead of throwing it into the "swill pail," and instanced the custom in France and Switzerland of making palatable dishes of surplus food as a wiser and more economic course than throwing it away. Surgeon-General STERNBERG, U. S. Army, spoke of the necessity for the prompt disposal of garbage, because of the danger of dissemination of putrescent matter by house flies. Many mysterious cases of diarrhea and typhoid fever are due to direct contamination of flies, and cases of cholera have been caused in the same way. Dr. CLARK agreed with Dr. Gihon that the American people cooked more food than they can eat and consequently wasted it. Dr. Lee introduced Dr. VARIAN, President of the Health Board of Titusville, Penn., who described the method of burning garbage in that city, where natural gas is the only fuel. Dr. CARTER of Detroit, said if the fluid part of garbage is poured off, all the rest can be burned in the ordinary fire box. Dr. MITCHELL objected to the endorsement of Major Tremaine's proposal to cremate excrement, as this had been known to produce typhoid contamination. Dr. DURGIN of Boston, said that of the two kinds of waste material, that collected out doors and that in the house, the latter must go through fire to be purified. He advocated plants situated at various sites in the city to have as short a haul as possible and he did not think the duty of removing household garbage should be imposed on the city. Dr. HOWE of Buffalo, referred to flies as filth disseminators. He said that if people were required to pay for the removal of garbage as they do for their gas, they would not make so much. Dr. DANIEL LEWIS, President of the State Board of Health of New York, advocated curative stations every few blocks for the removal of garbage instead of casting it over the whole city. Dr. A. N. BELL of Brooklyn, insisted on the necessity of compelling citizens to dispose of their garbage in their own homes and at their own expense.

The report of the committee on "The Transportation and Disposal of the Dead" was read by the chairman, Dr. CHARLES O. PROBST, Secretary of the State Board of Health of Ohio, and was following by a paper on the "Quick or the Dead" by Dr. BENJAMIN LEE, Secretary of the State Board of Health of Pennsylvania, in which the claims of living over the dead were set forth. Dr. DURGIN of Massachusetts, recommended a steel casket for deceased bodies and Dr. SMART U. S. Army, spoke of the contamination of the soil of cemeteries from dead bodies.

AFTERNOON SESSION.

A paper on "Measures for the Prevention of Blindness," was read by Dr. AUGUSTIN CHACON, vice-president of the Ophthalmologic Society of Mexico, and delegate from the State of Aguascalientes, Mexico.

Dr. LUCIEN HOWE of Buffalo, said that a large proportion of the diseases inducing blindness is preventable, but only preventable when attended to early, and they are not attended to early because the persons who have them in charge are apt to say that they amount to nothing and the cornea is ulcerated through before they become subjects of treatment. The law ought to require every case of infantile ophthalmia to be reported at once to some legally qualified practitioner. This is done in some States, but in others, as North Carolina, it was found it could not be passed because it affected midwives. He offered two resolutions on the subject which were referred to the executive committee. Dr. VALENTINE spoke on the same subject, advocating Credé's method of prophylaxis.

A paper on "Miasmatic Fevers in the State of Sonora," by Dr. ALBERTO G. NONEGA, delegate from the State of Sonora, Mexico, and one entitled a "Summary of Sanitary Legislation in the State of Mexico," by Dr. MAXIMILIANO ALVAREZ, delegate from that State, were read, and followed by the Report of the Chairman of the Committee on National Health Legislation, Dr. HENRY P. WALCOTT, president of the State Board of Health of Massachusetts, which was read by Dr. WINGATE of Milwaukee, a member of the committee.

The proceedings were at this point interrupted to permit the introduction and customary reference to the Executive Committee of resolutions offered by Dr. COVENTRY of Windsor, Ont., declaring as the sense of the Association that boards of health should be absolutely independent of political considerations influencing their appointment or conduct, and by Surgeon General GEORGE M. STERNBERG, authorizing the secretary to receive subscriptions for a monument in the city of Paris to Pasteur, which brought Medical Director ALBERT L. GIHON, U. S. Navy, who is chairman of the Rush Monument Committee, to his feet, with an amendment substituting the City of Washington for Paris, and the name of Benjamin Rush for that of Pasteur.

Papers entitled "Obiter Dicta Concerning Sanitary Organization," by Dr. A. WALTER SUITER of Herkimer, N. Y., "Some Thoughts Relative to National Health Legislation," by Dr. U. O. B. WINGATE of Wisconsin, and "On the Sanitary Administration of Unincorporated Districts," by Dr. HENRY MITCHELL of Trenton, N. J., were then successively read by their authors. Dr. Mitchell proposed that the sanitary authority in each township should be exercised by one individual, that each local officer should hold office for five years, that examinations of candidates for appointment should be by State boards of health, and appointments only made from a list of persons recommended by the State boards, that removals should be made only for cause, and that the local health officer should be paid by the governing body for his services.

Dr. C. E. HOLGATE of New Haven, said, that laws covering these points had already been enacted in Connecticut, and Dr. CAVERLY of Vermont, added that State to the list of those having a county organization of health officers. Dr. JONES of Greenwich, Conn., recommended the establishment of a College of Preventive Medicine. Dr. BRYCE of Toronto, spoke in behalf of the measures recommended by the committee. Dr. LEE of Philadelphia, explained the reasons for the delay in sanitary organizations in Pennsylvania. Dr. CARTER of Des Moines, said that there were three thousand local health boards in Iowa with as many physicians as health officers. These are all subordinate to the State board of health and he believed that all State boards should be similarly subject to a National board of health. Dr. DANIEL LEWIS of New York, was of opinion that the committee should be one of investigation and not one to make recommendations and he doubted whether a resolution could be passed in this Association in favor of a controlling National board of health. Dr. Mitchell submitted a resolution on the subject of his paper, which went to the executive committee.

The report of the "International Committee on the Prevention of the Spread of Yellow Fever" was then read by the chairman, Dr. FELIX FORMENTO of New Orleans, followed by a paper entitled "Contribution to the Study of Yellow Fever from a Medico-geographic Point of View," by Dr. EDUARDO LICÉAGO, president of the Association; and a second "Contribution to the Study of Yellow Fever Epidemic in Cordoba," by Dr. GREGORIO MENDIZABAL, delegate from the State of Vera Cruz. Dr. Formento's resolution recommending a memorial from the President of the United States to the Spanish American countries which are permanent foci of yellow fever, was referred to the executive committee.

It had been the intention to hold no evening session, but the desire to hear the paper "On Isolation Hospitals" by Dr. JOHN L. LEAL of Paterson, N. J., was so great that a recess was taken until 8 P.M., when it was read and discussed by Dr. Lindsley of New Haven, Dr. McShane of Baltimore, who exhibited plans of the new isolation hospital of that city, Dr. Barnes of Boston, Dr. Plunkett of Nashville, Dr. Wright of New Haven, Dr. Probst of Columbus, Ohio, Dr. Woodward of Washington, D. C., Dr. Hibberd of Richmond, Ind., Dr. Gihon of U. S. Navy, Dr. Durgin of Boston and Dr. Woodhull of U. S. Army, the Association adjourning at 10 P.M., to attend a reception by the Ellicott Club.

The Mexican delegates celebrated the eighty-sixth anniversary of the Declaration of Independence of the Republic of Mexico (Sept. 16, 1810) by a banquet at the Iroquois Hotel, and later joined their fellow American and Canadian members at the reception at the Ellicott Club.

THURSDAY—MORNING SESSION.

The meeting having been promptly called to order by the First Vice-President, Dr. WOODHULL, the daily announcements of the Local Committee of Arrangements was made by Dr. Lucien Howe of Buffalo, and the Treasurer Dr. HENRY D. HOLTEN of Brattleboro, Vt., presented his annual report, which was referred to the Auditing Committee.

The funds on hand Sept. 23, 1895, amounted to	$ 574.08
Received from sale of Transactions	118.40
Received from membership dues	2,075.00
Received from advertisement in volume	118.00
	$2,885.48

Expenditures for reporting proceedings, publication of volume, expenses of Secretary and Treasurer's offices, expressage, postage and printing of early volumes of Transactions to complete sets, amounted to $1,522.96

Leaving a balance in the treasury of $1,362.92

The unexpended balance of the "index fund," for indexing the early volumes, is $493.48

The Secretary reported from the Executive Committee, with its recommendation of passage, the following resolutions, which had been referred to it:

1. That the Treasurer be authorized to appoint an assistant treasurer for Mexico.

2. The resolution of Dr. SMART, U. S. Army, to appoint a special committee of five members to consider and report upon some method by which international arrangements may be effected to prevent the transmission of infectious diseases from one country to another.

3. The resolution of Dr. COVENTRY of Canada, amended to read, that the Association views with pleasure the growing tendency of many States and Provinces not to manage and control the bureaus of public health by political partisans, and not to exclude from office sanitarians who may differ politically from the party temporarily in power. From a scientific standpoint, as well as in the best interests of public health, we welcome this tendency and take this opportunity to place ourselves on record by declaring that it is conducive of the best interests of public health to ignore political lines in the formation of State, Provincial and other boards of health, and that a copy of this resolution be sent to the Secretaries of State of all Federal, State and Provincial governments of the countries represented in this Association.

4. The resolution of Dr. WINGATE of Wisconsin, amended to read, that it is the sense of this Association that the Committee on National Health Legislation be continued and that efforts be continued to influence the Congress of the United States to establish a Department of Public Health at Washington, D. C.

5. The resolution of Dr. LICÉAGA of Mexico to constitute a special committee of five to study the periods during which each contagious disease is transmissible and the term during which any person, who has suffered from such disease, is dangerous to the community.

6. The resolution of Dr. HOWE of Buffalo—"WHEREAS, about one-fifth of all the inmates of schools and asylums for the blind are there because of having suffered from purulent ophthalmia in infancy; and whereas, the ravages of this disease can be controlled in almost every case if proper treatment is begun promptly; and whereas, most of this blindness is due to the wilful or ignorant neglect of nurses and midwives, thus causing unspeakable misery to the innocent victims and great yearly cost to the State treasury;

"*Resolved*, That this Association heartily approves of the laws already enacted in several States which compel midwives and nurses to report these cases, under heavy penalty immediately to legally qualified practitioners or to proper officers of local boards of health; and *Resolved*, That this Association recommends and urges the adoption of similar laws in other States of the Union or elsewhere wherever practicable."

All which were unanimously adopted.

The Secretary reported the names of twenty-five additional applicants for membership recommended for election and who were accordingly elected, after which the scientific work of the Association was begun and continued in the following order: Report of committee on "Pollution of Water Supplies," by Major CHARLES SMART, Washington, D. C., Chairman; report of committee on "River Conservancy Boards of Supervision," by Dr. PETER H. BRYCE of Toronto, Secretary of the Provincial Board of Ontario, Chairman; report of committee on "Protective Inoculations in Infectious Diseases," by Dr. CHARLES N. HEWITT of Red Wing, Minnesota, Secretary of the State Board of Health of Minnesota, Chairman.

At this point Vice-president Woodhull interrupted the proceedings to read a telegram just received from the medical attendants upon the Second Vice-president, Dr. Henry Sewall of Denver, Colorado, who was prevented from being present by a serious attack of typhoid fever. The telegram was in reply to one of sympathy sent by the Association on Tuesday upon motion of Dr. Montizambert of Canada, and informed the Association that his case was progressing favorably and thanking it for the interest expressed.

A paper on "The Serum Diagnosis Test for Typhoid Fever," by Dr. WYATT JOHNSTON of Montreal, presented a modification of the serum diagnosis test introduced by Vidal, which Dr. Johnston had found expeditious and satisfactory. A paper on the "Prophylaxis of Typhoid Fever," was read by Dr. J. ELIOT WOODBRIDGE of Cleveland, Ohio, who stated that the flow of the lake front of the city, which was originally clear white sand over a sub-stratum of clay, had in the course of recent years been covered by a progressively increasing layer of slime several feet thick. He declared that for every case of typhoid a city government is morally responsible, as all cases can be traced to bad sewerage or polluted water. The paper was discussed by Drs. Carmona y Valle of Mexico, Cerna of Texas, Kinyoun of U. S. M. H. S., Learned of Massachusetts, and Bailey of Kentucky.

Dr. DURGIN of Boston, offered a resolution deploring the passage by Congress of a law preventing experiments upon animals, which was referred to the executive committee.

The next series of papers excited the greatest interest and elicited discussions and inquiries propounded by members to the authors. "Practical use of Formic Aldehyde as a Disinfectant," by Prof. FRANKLIN C. ROBINSON of Maine; "A Convenient Lamp for Generating Formaldehyd Gas," by Dr. A. E. DESCHWEINITZ, Washington, D. C.; "Preliminary Note on the use of Formaldehyd for Room and Car Disinfection," by Surgeon J. J. KINYOUN of Washington, D. C.

AFTERNOON SESSION.

Report of committee on the "Cause and Prevention of Diphtheria" was presented by Dr. J. J. KINYOUN, of Washington, D. C. This was followed by papers on: "Diphtheria in Chihuahua," by Dr. MIGUEL MARQUEZ, of the State of Chihuahua, Mexico; "On Bacteriologic Diagnosis as governing the admission and discharge of patients in Diphtheria Hospitals," by Professor E. B. SHUTTLEWORTH, of Toronto: "On Prophylaxis of Paludism," by Dr. ALFONSO RUIZ ERDOZAIN of Hidalgo, Mexico; "Paludism in the State of Morelos and its prophylaxis by Sanitary Measures," by DR. ANGEL GAVINO, of the State of Morelos, Mexico; "Brief Notes on Public Hygiene in the State of Tamaulipas," by Dr. G. GARZA, of Laredo, Mexico; "On Public Health in Tabasco, Mexico," by Dr. JUAN MULDSON, of Tabasco, Mexico; "On Sanitation in Hospitals for the Insane," by DR. GEORGE H. ROHÉ of Maryland; "Should Measles be Quarantined? by Dr. HENRY M. BRACKEN, of Minnesota; report of committee on "Causes and Prevention of Infant Mortality," by Professor CHARLES N. HEWITT, of Minnesota; "On Mortality of Infants, the Causes and Means of Diminishing it," by Dr. SALVADOR GARCIADIEGO, of Jalisco, Mexico; "On Diarrhea of Children," by Dr. JOSE M. BENITEZ, of Guadalajara, Mexico.

EVENING SESSION.

Session began with the report of committee on the "Use of Alcoholic Drinks from a Sanitary Standpoint," by Dr. FELIX FORMENTO of Louisiana. The committee favored the moderate use of pure wines and beer, and advocated temperance and not prohibition. A sharp distinction was drawn between such use and alcoholism from the abuse of ardent spirits. "Spasmodic and inefficient Sunday laws" were decried and the palm for hard drinking awarded to Americans as a nation. Wine-producing and wine and beer drinking countries were cited as comparatively free from intoxication. Coffee-drinkers, according to the committee, are seldom addicted to the immoderate use of liquor.

The paper was discussed pro and con by Drs. Carter, Grosvenor, Bailey, Vice-president Woodhull and Nelson R. Hopkins.

A paper was read "On the Bicycle in its Sanitary Aspects," by Dr. ALBERT L. GIHON. The speaker announced that he had not set out to assail the bicycle and its ideal rider, but only the hideously distorted creature whose unnatural posture is affected by "expert" wheelmen. He adverted to the serious harm to women from improper saddles, quoting from medical wheelmen in support of his statements. As a mere matter of health incentive, he said, pedestrianism remains unrivaled, but for those who will not walk the bicycle under the restrictions and limitations indicated may become an useful alternative. If the bicycle is to merit praise, the ridiculous posture affected by professional male riders and their imitators must be discountenanced and denounced by wheelmen's periodicals, forbidden by wheelmen's clubs and discouraged by reputable makers and dealers. Girls under the age of puberty should be restricted by parents, guardians and teachers to short rides, and no woman of any age be mounted on any other than a wide elastic seat without anterior horn or central ridge. Lastly, the gate of the bicyclist should be such as can be maintained with the least personal exertion. The paper was briefly discussed by Dr. Carter and Dr. Mosher of Ann Arbor, Mich.

This was followed by a paper "On the Part that Public Instruction Should Have in the Way of Precaution Against Contagious Diseases, by Dr. CARLOS SANTA-MARIA of Durango, Mexico: "On Public Bathing Establishments, with a Description of the New Public Bath in Brookline, Mass.," by Dr. H. LINCOLN CHASE; "On Public Baths" (illustrated by stereopticon), by Dr. W. H. TOLMAN of the city of New York.

(To be continued.)

THE
Journal of the American Medical Association
PUBLISHED WEEKLY.

SUBSCRIPTION PRICE, INCLUDING POSTAGE:
Per Annum, in Advance $5.00
Single Copies . . . . . 10 Cents.
Subscriptions may begin at any time and be sent to
THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
No. 61 Market Street (Occidental Buildings), Chicago, Illinois.

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SATURDAY, OCTOBER 10, 1896.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.

The mere enumeration of the reports of special committees and individual papers read at the recent meeting of the American Public Health Association at Buffalo, N. Y. (September 15-18), is sufficient evidence of the amount of scientific sanitary inquiry accomplished. Four addresses, sixteen reports of committees and fifty-three papers—seventy-three in all—constitute a formidable list, and when to these are added the discussions on these reports and papers, which are arranged in groups according to subjects, these discussions being a characteristic of this body, which it encourages and on which it justly prides itself, its reputation as a working body can not be questioned. The Association was actually in session eight hours on the first day, eight on the second, nine on the third and five on the fourth, a total of thirty, the general business occupying scarcely an hour each day. Giving thirty minutes to each report and limiting voluntary papers to twenty, of which only five were read by title, and restricting discussions to five minutes, it will be seen how well the time was filled, a result accomplished only by the admirable business methods of this excellent body. The unflagging interest of the old members was shown by the fact that nine of the thirteen surviving ex-presidents were in attendance and very actively engaged on duty as members of the Executive Committee. Prof. STEPHEN SMITH of New York City, the founder of the Association and its first President (1872, '73 and '74) in his address in acknowledgement of his enthusiastic welcome at Buffalo declared he was especially gratified at discovering that the Association still adhered to its early practice of doing its administrative business through an executive committee, thus taking the disputations and hysteric jangling, by which so much time is wasted in many large associations, off the floor and permitting the legitimate work for which the Association was organized to be performed. Every resolution offered is read and upon being seconded referred without debate to the Executive Committee, by which it is carefully considered, amended, if thought best, in substance or language, and referred back the following day to be put upon its passage, or quietly tabled in committee. The confidence in the conclusions of the committee is such that debate seldom occurs and dissent rarely. The composition of the committee justifies this confidence. The five officers, six elected members, of whom three are renewed annually, and the ex-presidents secure a judiciary of old and experienced members. Occasionally some disappointed proposer of a resolution, on finding his hobby not reported, jumps up with an amendment to the constitution changing the composition of the committee, usually by leaving out the ex-presidents, but a year of sober reflection before the retaliating amendment can be considered, has heretofore saved the Association the loss of what may be considered its balance wheel. The participation of the former presidents preserves a constant policy and preserves it from local influences, log-rolling and hasty, injudicious legislation.

The duty of the Executive Committee is no sinecure. It assembles early on the day preceding the annual meeting and is in session the greater part of that day and subsequently daily from 8 or 9 to 10 A.M., and usually at night after the adjournment of the evening general session, often when matters of importance have been referred to it continuing its work until two or three o'clock in the morning. The Executive Committee investigates every application for membership and determines whether to recommend the applicant for election. As stated, it considers every resolution introduced into the Association, amending it as it may believe proper, or changing its phraseology. It examines all papers and prepares the daily programs, and generally discharges all the working duties of the Association. An Advisory Council, consisting of one member from each State, Territory, the District of Columbia, the Army and Navy of the United States, the Marine-Hospital Service, the Dominion of Canada and each of the Provinces, and each State, Territory and the Federal District of the Republic of Mexico, besides acting as a nominating committee of officers and selecting the place of meeting for the ensuing year, also considers important questions of policy and makes such recommendations to the Association as shall best secure its objects. Through this council, which is virtually a senate of over eighty members,

the equal representation of all the constituent nationalities and States is obtained, and its recommendations in matters of vital importance have always been sustained. At the meeting just ended, however, its selection of the place of meeting for 1897 was reversed for reasons that had not been presented to it.

The Executive Committee, the Advisory Council and the Publication Committee (the last consisting of the Secretary and and two members residing conveniently near him), are the three standing committees, and practically do all the general business, and the splendid uniform series of volumes of its transactions for the twenty-four years of its existence are speaking testimony of the value of its sanitary work, constituting a hygienic library containing information which FLORENCE NIGHTINGALE declared could not be found anywhere in Europe. To the Chairman of the Publication Committee, the Secretary of the Association, Dr. IRVING A. WATSON of Concord, N. H., Secretary of the State Board of Health of New Hampshire, now in his fifteenth year of office, is due the invariably neat and appropriate announcements, circulars, etc., which are characteristic of this body. Indeed, Dr. WATSON's suggestion of a desire to resign the Secretaryship (which is a triennial office), on account of the proportions its duties have assumed, alarmed the members at the prospect of losing an officer so exceptionally qualified, faithful and efficient.

The American Public Health Association is characteristically *American*. In 1884 it extended its membership to Canada and in 1890 to Mexico, the membership of both these countries embracing their most distinguished sanitarians and health officers, who have been as regular in attendance, as interested in the work, and as enthusiastic and able contributors as those from the United States. Two annual meetings have been held in Canada, in 1886 and 1894, and that of 1892 in Mexico; and both Ottawa and Toronto contended for the meeting in 1897.

An especially commendable feature of this Association is that it is in no sense a junketing body. It goes where it hopes to do good and devotes itself to that end. It asks no courtesies and is prepared to assume all the expenses of its meetings. Nevertheless, civilities have been everywhere generously showered upon it and accepted conditional upon their non-interference with its legitimate work. At Buffalo the Local Committee arranged its excursions after the formal adjournment, only requesting that one night might be assigned for a reception at the Ellicott Club, but an interesting paper induced the members to meet before the reception and hold a session of a couple of hours before presenting themselves at their hosts.'

The system of special committees, covering almost the whole ground of public hygiene, secures a concert of inquiry. At Buffalo, sixteen of the seventeen special committees (now numbering twenty) actually presented reports, and an examination of the authorship of these reports and of the individual contributions, shows that all but five or six of the seventy-three writers hold or have held responsible representative positions as members of State and Provincial Boards of Health and of the Superior (National) Board of Health of Mexico, as health officers of cities, and as Government officials of the United States Army and Navy and the Department of Agriculture, thus directing their several lines of inquiry in common channels. Dr. STEPHEN SMITH claims for the Association the credit of having developed the system of State and Provincial Boards of Health into its proportions. Originally the subject of a special committee, whose work grew so large that a whole session was devoted to it exclusively, becoming later a Conference of State Boards of Health, meeting at first coincidently with the Association and later independently, the new organization has never lost interest in the parent body, as shown by the numbers of presidents, secretaries and members of State and Provincial Boards of Health who participated in both the business and sanitary work of the late meeting as chairmen and reporters of special committees, authors of papers and disputants in the discussions. Perhaps the crowning glory of the American Public Health Association has been the establishment of a fraternal union of the United States, Canada and Mexico in one body, in which international distinctions are abolished, and the sanitary officials of the three countries harmonized in the interests of a common humanity in a mutual policy of protection against epidemic importations.

A SLANDER ON THE MEDICAL PROFESSION.

In a medico-legal congress a year or two ago it was asserted that it was the practice of reputable physicians to deliberately shorten life in cases of painful and incurable disease. A large portion of the public undoubtedly accepted this statement as gospel truth and possibly thought it nothing extraordinary. The superstition that the orthodox treatment of human rabies is of this character is held by many of the ignorant in the community, and even grosser errors of the same general nature may be occasionally met with among them.

The lawyer who made the statement referred to defended and advocated the practice and his utterance was, without question, based on no knowledge but was offered as a part or support of the argument he was making before the congress. It is a pity his ideas of the ethics of another learned profession should have been so hazy, and also that he was not more scrupulous as to his facts. His ideas were noticed to some extent by the medical and secular press at the time; the public had at least a chance to be enlightened and it is probable that, on the whole, the utterances did little harm.

The notion, however, that incurable diseases should be cut short by an expeditious euthanasia is every little while advanced by some one-sided humanitarian. The latest comes from California, where a misguided clergyman offers an elaborate proposition of a law for the doing away with the victims of incurable disease. It provides that "a commission of eight persons of high character and unassailable reputation be appointed by the governor of the State, four to be physicians, and the others to be the district attorney, the chairman of the health board, and two public spirited citizens of pronounced humane tendencies. The sufferer should appeal to the commission with the consent of his family, then the case should be thoroughly investigated by the commission, and if the physicians are satisfied that every known remedy has been tried, and the case is absolutely incurable and the patient has suffered intolerable pain, and the relatives can show that they act from none but humane motives, and all these points have been settled to the satisfaction of the commission, it should be empowered gently and humanely to put an end to the misery of the affected person."

The above in its elaborate legal ordering of homicide is very reminiscent of an imaginative work of fiction by an English writer of note that appeared some ten or fifteen years back, and, like it, might be taken as a satire on certain extreme social and economic tendencies. The author of the present proposal, however, is accepted as in earnest, and is probably only one of a large number who in their ill-regulated philanthropy throw well known moral and social principles to the winds. It is easy to see to what consequences his line of reasoning would lead, if the idea of the sacredness of human life were abolished, as would be necessarily the case with the adoption of any such plan.

The medical profession owes to itself and to the public a duty in this matter. It is not that it is misunderstood and misrepresented; there are many respectable and even estimable people who are more or less demoralized by the publication of such propositions, and public sentiment, which ought to be on the highest plane, is degraded to a very material extent by them. Society needs all the safeguards it possesses and the belief in the absolute inviolability of human life is one of the most important of these. There is no need, of course, to say that regular physicians should not encourage any belief in popular impressions derived from such publications, but there may be a very positive utility in their actively denouncing them. At all events they should endeavor to correct any popular belief that our profession sanctions even the suggestion of the violation of human or moral laws. It ought to be unnecessary to say that this should be done, but if we grow familiar with such charges and consequently neglect or ignore them, we have no assurance that such neglect will not appear to the uninformed as a tacit acknowledgment of their truth. When clergymen make such propositions as the one here reported what wonder that a credulous public should think it possible that doctors might be ready to endorse them or carry them out. The commandment "Thou shall not kill," would seem to be binding even upon the clergy. The public knows little and misunderstands a great deal in regard to the ethics of our profession and it is not amiss therefore to occasionally correct a possible misapprehension that they are not in all respects strictly in accord with the highest ethical standards. There is little danger, judging from our past, that we will protest too much.

THE MANIA FOR PROPER NAMES.

Several of our foreign exchanges are protesting against the practice of rendering the study of anatomy more difficult by encumbering the text books with the names of parts of the body which neither describe nor locate them, but merely commemorate the name of some obscure anatomist. The boast of the student now is that he can quote more proper names than the rest; but they are of no benefit to him in locating the parts designated by them. How much better to call it the anterior sacro-dural ligament than Trolard's ligament, for instance? It is a longer name, but it means something, and enables the student to place it at once.

In surgery the abuse passes all proper limit. It is not only perplexing to enumerate the various operations, but in many cases a name has been hastily applied to an operation not devised by the person named. It is simply an impossible thing for the average surgeon to mention *seriatim* the various incisions that have had proper names tacked on to them, and then the question of priority is generally impossible to settle by any amount of research. One of our recent dictionaries has devoted much space to the definition of operations catalogued under proper names, and as for instruments, many of them have two or three claimants. The familiar example of a cranial saw first figured in the "Chyrurgeons Storehouse" of SCULTETUS, coming to us for a long time under the name of HEY'S saw, and by many still called by that name, affords ample evidence, if any more were needed, of the loose practice in this matter.

In medicine there has been a singular passion for naming diseases for some favorite, or somebody who is presumed to have been the first to give a description of the disease. In some cases we have conflicting claims of priority, but the number grows with too great rapidity, and in these days of almost total neglect of the history of medicine, serious and absurd errors are perpetuated. Now, let us keep close to

nature in our nomenclature, and have it as nearly descriptive of the thing itself as possible. Then we approach the true scientific ideal.

CORRESPONDENCE.

Medical Education.

MONTCLAIR, N. J., Sept. 26, 1896.

To the Editor:—The two editorials upon medical education in the last issue of the JOURNAL are exceedingly well considered and show a decided disposition to go to the root of things. What is particularly pleasing in your remarks is the strong demand for *thoroughness* in our medical schools, and the intimation that until better methods of teaching are adopted the mere lengthening of the curriculum will avail little. The medical schools seem disposed to indulge in much self congratulation because a number of them have extended the period of study required for a degree of doctor of medicine to four years, and most of them now seem to require more or less preliminary education. In the latter direction it hardly seems possible that they can go too far. But the rigid requirement of four years study of medicine is perhaps not so wise a measure. At all events it has always seemed to me that the object to be gained in going to a medical school is a knowledge of medicine sufficient to enable a man to enter upon the practice of it, and some men will easily acquire in three years what it will take others four to accomplish. No two minds are precisely alike in childhood and as individuals approach maturity these mental differences increase rather than diminish so that it may prove a hardship and an injustice to a man with an unusually brilliant and acquisitive mind to be forced to spend the same amount of time in studying for his degree as the more slow going individual. Your editorial speaks of bedside examinations of students. In like manner the candidate should be examined in the deadhouse as to his knowledge of gross pathology, should operate upon the cadaver (if living subjects are not available), should bandage the manikin, etc. He should compound prescriptions, and be required to detect and demonstrate incompatables and poisons and should give the antidotes to the latter; in short he should be put through an examination which would really reveal what he knows.

No written examination, no oral examination, no bedside examination, nor even the certificate of good moral character, alone is a sufficient test of a man's capacity to enter into practice. But a judicious combination of them all is, I submit, necessary and should be adopted in each case. Let the examinations last from three to six days. The examining board should sit constantly or nearly so and the candidate should be allowed to appear before it whenever he chooses. Let a fee sufficient to pay the board's expenses, say from $50 to $100, be charged each candidate. If he only desires to take part of the examinations, there seems to be no reason why he should not do so, paying only the fees of those examiners before whom he chooses to appear.

One student might qualify himself to pass all these examinations in two or three years. Another, who would perhaps make a sober and more reliable practitioner, would require four or five years. And—and this is the most satisfying part of the plan—a dullard, a superficial or lazy student, or one whose preliminary education had been quite defective could never pass at all. What a glorious day it would be for American medicine if such a plan could only be realized! How such a body of trained examiners would sift out the weak and badly prepared candidates! No amount of cramming would enable a weak or illy prepared man to pass a competent and trained examiner, who could take the applicant to the bedside, to the operating room, to the laboratory and to the dead house, who would require one or more carefully written papers upon his particular subject, and any number of answers both oral and written that he might think proper.

Such an examination as the one outlined used to be required and I presume still is by the Army Examining Board. When this board had finished five or six days' examination of a candidate, both the board and the candidate felt that the latter had told all he knew. It was the only fair and satisfactory medical examination which I ever passed. My examinations for my degree were trivial, almost foolish, and my examinations for the hospital were too short and were *greatly a matter of luck*.

It has been asserted over and over again that an examination does not show what a man knows; and this allegation is measurably true of such examinations as I have last spoken of, depending for their result as they do upon so many fortuitous circumstances, as, *e. g.*, the readiness and assurance of the candidate in case of oral examinations, and his capacity for cramming in case of written examinations. But an examination that takes plenty of time and which attacks the candidate's fund of knowledge in various ways as, for instance, setting the ready and superficial man to write answers which require thought, accuracy and careful study, and on the other hand, asking the slow, methodical man, whose written answers may be good, such questions orally as to reveal whether his work has covered sufficient ground, or taking the bookish man to the bedside or the laboratory and letting him show whether he can put his theories into practice, etc.

If the medical schools, the AMERICAN MEDICAL ASSOCIATION, the New York Academy of Medicine and every representative body of physicians and the profession at large will unite in insisting upon competent boards of examiners in medicine (whether they be State or National) we may sometime get such bodies of examiners and such examinations that the degree of doctor of medicine shall of itself confer distinguished honor. Our medical schools and our physicians would in that case no longer be looked down upon by our foreign confrères. The greatest good for the greatest number would be attained because the average physician would be a man of sound education and broadened views. This state of affairs would perhaps be rather near the millenium, but it is really not entirely beyond the range of possibility. Very respectfully yours,

RICHARD C. NEWTON, M.D.

Expert Medical Testimony.

PHILADELPHIA, Sept. 28, 1896.

To the Editor:—There have been many papers and articles written on the subject of expert testimony but none I think so clearly express what is needed in courts as that published in our JOURNAL of Sept. 26, by L. Harrison Mettler of Chicago, under the title of "Insanity in Court."

The Doctor's arguments are so convincing that criticism is well nigh disarmed. His demand for a separate medical trial to precede the civil where a plea of insanity is offered, carries great weight and would seem to be perfectly fair.

The commission, suggested by him, to be composed of learned and experienced experts appointed by the supreme court or in other constitutional way beyond the reach of politics is certainly to be desired.

It is only too true that "the present system does not carry out the abstract spirit of the law that every man shall be tried by his peers; but on the other hand works injustice in many cases of real insanity and favors the exercise on the part of criminals of feigned insanity." Such being the case, is it not time that the great AMERICAN MEDICAL ASSOCIATION should assert itself and formulate and pass resolutions in accordance with the progressive ideas on the subject of expert testimony.

Yours very truly, T. RIDGWAY BARKER, M.D.

PUBLIC HEALTH.

Smallpox at Marseilles.—Since 1872 there have only been eight years when the deaths from smallpox at Marseilles have been less than a hundred, and in 1886 they were over 2,000. There have already been 358 deaths in the first quarter of 1896, and the lax preventive measures render the city a menace to the rest of Europe. The disease is practically endemic in the Italian colonies there, which contain about 100,000 souls, with thirty or forty families crowded into buildings that would scarcely accommodate ten properly.

Oil in Urinals.—It has been found that if urinals are coated with heavy oil, the urine leaves no traces nor odor as it runs off. The 178 public urinals of Vienna are treated in this way, with satisfactory results, saving the city $30 a year for the water supply of each. Many other European cities have already adopted the use of oil for this purpose. The urinal is scrubbed with a broom and plenty of water once a week or fortnight. When it is quite dry it is painted with thick mineral oil, obtained by distilling petroleum. Another system has a permanent syphon supply of oil.—*Journal d'Hygiène*, September 30.

Successful Retrovaccination.—The New York Health Board, after a long series of experiments, has solved the problem of retrovaccination, the vaccination of calves with matter taken from vesicles on children. Early attempts in this direction gave imperfect results on account of the choice of improper kinds and methods of collection from the children. A report submitted by John H. Huddleston, Medical Inspector, shows that complete success has now been attained in the manufacture of vaccine virus. In all, fifty calves have been inoculated with the virus taken from children. In forty-seven of these the results of the clinical test of the virus thus produced are known. The test consists in vaccinating three places on each of five previously vaccinated children. With the virus obtained from the animals there have been vaccinated 123 children, with a total result of 367 vesicles obtained out of 369 possible. In over 300 cases vaccinated and inspected this month at the department, 95 per cent. were successful, and the 5 per cent. of failures were all revaccinations.

The Distribution of Sterilized Milk in New York and Brooklyn.—Statistics obtained at the health department show the good effects of the free distribution of sterilized milk in Brooklyn under the auspices of the Board of Health, a charitable work that was made possible through the philanthropy of Mr. Nathan Strauss. The death rate during the second week of the recent hot weather among children under five years of age was only 34.4 of the total number of deaths, which is quite a remarkable showing when it is considered that the general death rate was exceptionally high owing to the excessive heat. It is necessary to go back to the beginning of June to find a week when the death rate among children was as low as that. During the period when the heat was most intense Mr. Strauss sent over to Brooklyn about 1,500 bottles of sterilized milk a day. A large force of men was employed at the New York depots, getting the milk ready for distribution, and it was transported to Brooklyn at the expense of and with the wagons and horses of the donor.—*Boston Medical and Surgical Journal.*

Treasury Regulations Regarding Immigrants.—The *Boston Medical and Surgical Journal* states that the Treasury Department has issued an order designed to prevent the spreading of contagious disease by immigrants in other places than the port of entry. It provides that after arrival at a quarantine station of a vessel upon which there appears, or has appeared during the last voyage, a case of cholera, smallpox, typhus fever or plague, and after quarantine measures provided by regulations of the Treasury Department have been enforced and the vessel given free pratique, it is ordered that notification of the above-mentioned facts be transmitted by the quarantine officer to the commissioner of immigration at the port of arrival, whose duty it shall be to transmit by mail or telegraph to the State health authorities of the several States to which immigrants from said vessel are destined, the date of departure, route, number of immigrants and the point of destination in the respective States of the immigrants from said vessel, together with the statement that said immigrants are from a vessel which has been subject to quarantine by reason of infectious disease, naming the disease. This information is furnished to State health officers for the purpose of enabling them to maintain such surveillance over the arriving immigrants as they may deem necessary.

Toxicity of Alcohols.—Austria, Switzerland and Belgium are about to, or have already, established two grams per litre as the maximum of impurities allowed in alcohols, and the latter country forbids certain substances absolutely. Professor Riche in a vigorous address before the Acad. de Méd. protests against the impression produced upon the public by this and similar legislation, that it is only the adulterations that render alcohol injurious. The people should be educated that the alcohol itself, brandies, etc., are distinctly toxic; and he asserts that there should not be any government authority, tacit or official, for its use as a beverage. He adds his testimony that the spread of alcoholism in recent years is appalling, and describes the customs prevalent in Normandy, where the laboring classes, young and old, all take their coffee two or three times a day, and always with cognac. The mothers even take a bottle of this "coffee" to their little children in the crèches. At one small town the amount of pure alcohol consumed per capita is more than nineteen litres a year—*Bulletin*, September 8.

The Abolition of British Quarantine.—The *Lancet* says that under a "Public Health Act of 1896" we have this year, will be done away with the last vestige of quarantine in the United Kingdom. The principal section of the Act is the first one, in which power is granted to the local government board to make regulations, just as they have already done for the purposes of cholera, as to the hoisting of signals by vessels having any case of infectious disease on board; as to the questions to be answered by masters, pilots and others; as to the detention of vessels and persons infected; and as to the duties of certain individuals under the regulations. The term "epidemic, endemic, or infectious disease" naturally includes yellow fever and plague, the only two diseases as to which quarantine was carried out, and since all the quarantine acts mentioned in a schedule are repealed, the only method of dealing with these two quarantinable diseases will in the future be that which has now been adopted for many years as regards cholera. In Scotland and in Ireland the local government boards of those portions of the kingdom acquire similar powers, and it may be assumed that the regulations made in the three portions of the United Kingdom will be alike in all essential respects. The Act comes into operation on November 7 of this year, and by that time new regulations will doubtless have been issued to give effect to its provisions.

Dangers of Handling Skins.—At the request of the French authorities, Prof. Riche has been investigating the trade in skins to determine the dangers of handling them. He found arsenic in skins from China, Chicago, Buenos Ayres, Australia and Mexico, but he does not consider the danger from arsenic so serious as the possibility of infection from the anthrax microbes. He therefore recommends the following precaution which apply to both and have been promptly enforced in Paris, where over two million goat skins alone are handled annually in the tawing works and nearly a million in the morocco factories, the majority received from China. The bales should

be opened in the open air, or at least in an open shed, the ground kept wet with plenty of water or some antiseptic. The workmen should put on special garments closed at the neck and wrists, or at least a long buttoned blouse, with rubber gloves. The face, hands, arms and neck should be washed with an antiseptic immediately afterward, and the locality carefully swept and irrigated. The bales should never be carried in the arms or on the back, but always on carts or barrows, and they should be stacked in the store-rooms in low piles. The rooms should have openings on all sides and if there is no communication with the sewers, the refuse water should be collected in tight cisterns. He also called attention to the great danger of poisoning from the orpin used in tanning, which is a mixture of sulphid of arsenic and arsenious acid. This is applied with a mop, but the skins are then folded and carried by hand to the pile, which is a frequent cause of ulcerations. He suggests the substitution of sulphid of sodium, which produces the same effect and would put an end to the dangerous manufacture of orpin.—*Journal d' Hygiène*, September 17.

On the Prevention of Ophthalmia Neonatorum.—We have before us two pamphlets by Dr. Wm. George Sym of Edinburgh bearing upon the conditions that obtain in Scotland regarding blindness from ophthalmia neonatorum. The more recent of the papers is an address read before the Medico-Chirurgical Society of that city, in March, 1896. In it he has briefly sketched the various modes of treatment and prophylaxis, and emphasized the importance of cleansing the face of the child from any contamination acquired during its passage through the vagina before any lotion was applied or any bathing carried out. Statistics of blindness in the latest census returns showed that there were more than five thousand alive in England and Scotland who were blind from this entirely preventable disease. On comparing the statistics of blindness for England with those for Scotland it was found that in the former there were 809 blind persons per 1,000,000, in whom 1 in every 6 was "blind from birth," while in Scotland there were only 695 per 1,000,000 of the population, and of these only 1 in 7.7 was "blind from birth." Children who became blind during early infancy were classed in the census papers as "blind from birth." This marked difference in favor of Scotland the author attributed, in part at all events, to the very much larger proportion of births in England attended by midwives and not by regular practitioners. He urged the necessity of taking the greatest care to see that all women educated as midwives or midwifery nurses should be thoroughly instructed in this matter. In the event of the Midwives Bill passing and being extended to Scotland this would come to be of paramount importance. Dr. Sym gave an account of the legislation in force in certain countries with the view of stamping out the disease. In Austria, Switzerland, eleven States of the American Union, and other countries, midwives were liable to more or less severe punishment for failure to report cases that occurred in their "practice." The Ophthalmological Society's (1885) scheme for giving out to each person registering a birth a slip bearing a warning as to the danger of the disease fell through, but in Glasgow and certain other towns this had been done at the expense of the corporation, and Dr. Sym urged a similar proceeding in Edinburgh. Contrasting medical practice twenty or thirty years ago with that of to-day, the number of cases of ophthalmia in infants was vastly less at the present time, and the cases as a rule were not so virulent.

The Infectious Disease Hospitals of Berlin.—The *Sanitary Journal*, June, has a special report on the fever hospitals of Europe. The institutions at Berlin are reported as having the modern improvements and a talented staff:

"Berlin affords some of the best examples of isolation hospitals in Northern Europe. There the study of infectious disease is carried on with the patient assiduity and thoroughness characteristic of German modern science. In the Koch Institute, established by the famous professor whose name it bears, all kinds of febrile disease are studied in a series of highly-equipped laboratories by graduates and students, under the superintendence of highly qualified experts, presided over by the Professor himself. In the adjoining grounds, close by the Charité Hospital, there is an experimental hospital laid out by Dr. Koch upon his own principles, in which are treated all kinds of infectious disease, including tuberculosis and lupus. Here it may be observed that all over the continent I found Dr. Koch recognised as the leading medical modern exponent of the treatment of infectious disease and of bacteriologic science. His pupils are already among the most prominent teachers in many continental medical schools, and some of their discoveries—notably that of Löffler in diphtheria—have produced highly beneficial results. The principal hospitals in Berlin for the treatment of febrile diseases are the Moabit, capable of accommodating 900 patients, constructed upon the plan of single floored pavilions and for the most part of wood; the Friedrichshain Hospital, built in 1874, affording accommodation for general as well as fever patients and built in two, and in one or two cases, three floored pavilions; the Urban Hospital, opened in 1890, with accommodation for 600 patients of all classes, showing the most that can be made of limited space where ground is dear within a large city, and also built in two or three-floored pavilions, and lastly, the Emperor and Empress Frederick Fever Hospital for Children, recently erected by the Berlin municipality, where the results of the most modern scientific research have been adopted in the general plan of the hospital, which is laid out in single-floored pavilions."

PRACTICAL NOTES.

For Infantile Eczema.—Dust with the following powder: Pulv. zinc oxid. gms. 15; pulv. amyli 32; pulv. camphor 2. For itching, paint on the skin: Tr. camphor, tr. benzoin co. ãã c.c. 32.—Dr. C. E. Lockwood, in *Med. News*. September 26.

New Treatment of Warts.—Laubenburg has discovered that if a spot is touched with acidum nitr. fum. and then immediately afterward with acidum carbol. pur. liquef. there is strong chemic action, the effects of which penetrate deep into the tissues and completely and permanently cure warts, condyloma, angioma, etc.—*Cbl. f. Chir.*, August 8.

Permanganate of Iron in Eczema.—The *Monitor Médico*, August 1, quotes from an exchange that both dry and serous eczema are successfully cured by moistening them two or three times a day with a 1 to 2 per cent. solution of permanganate of iron applied on a cotton wad. It is also recommended for other skin affections accompanied by pruritus.

New Needle Lancet for Secondary Cataract.—Stilling of Strasburg, has been using very successfully in his practice the last year and a half, a needle lancet shaped like the half of an arrow, its two cutting edges doing away with the necessity of using the cataract knife. It is illustrated and described in detail in the *Revue Gen. d'Ophthalmologie*, August 31.

The Siesta and Digestion.—Some recent experiments are reported in the *Gaz. degli Osp. e delle Clin.*, of September 1, which demonstrate that a nap after eating weakens the muscular action of the stomach and increases the secretion of acid. Repose in a horizontal position, without sleeping, increases the muscular action without increasing the secretion of acid. The conclusions are therefore that it is advisable to lie down after a meal, but not to fall asleep, especially in case of dilatation of the stomach or hyperacidity.

Multiple Vesical Puncture.—Centra describes a case of retention of urine with serious symptoms due to asymmetric hypertrophied prostate. He withdrew the urine by vesical puncture and in four days the congestion and hypertrophy of the prostate were reduced to such an extent that the patient could urinate normally. The interesting feature of the case was the number of punctures necessary to effect a cure, three each day.

They were made at different points along a horizontal line commencing 1 cm. above the upper edge of the symphysis pubis, and produced no inconveniences.—*Gaz. degli Osp. e delle Clin.*, August 30.

Gangrenous Hernias.—Bogdanik suggests that better results will be obtained in gangrenous hernias if the pus and surrounding tissues are cleansed and disinfected before the peritoneum is touched. He describes a case thus treated in the *Cbl. f. Chir.*, August 15, proving the advantages of rendering the field of operation a clean wound before proceeding to the operation proper. He adds that the scissors, knife and a few clamp forceps are all that is needed if the suture of the intestine is made exact.

Celluloid Soles for Flat Foot.—Kirsch recommends the use of celluloid instead of metal, for insoles in the prothesis of flat foot, as they require no skill in making and are exceptionally cheap, light and easy to walk on. A sheet of celluloid 1.5 to 4 mm. thick according to the weight of the patient, is placed on a cast of the foot and kept in place by a handkerchief, held by the twisted ends as a handle. The whole is then dipped into boiling water for a minute or a half, which softens the celluloid. The ends of the handkerchief are then twisted tighter, and the celluloid molded to the cast as it hardens. It can be softened again as often as may be necessary. The edges are smoothed level, cut into the proper shape and sand-papered, and the under side made rough to prevent slipping in the shoe. If the celluloid is painted with soluble glass it becomes almost fireproof, which is an important improvement for the celluloid bandages described in the JOURNAL, August 22, page 437, but is scarcely necessary for an insole.—*Cbl. f. Chir.*, August 29.

Treatment of Sunstroke.—Desanti's article in the *Gaz. degli Osp. e delle Clin.* of August 30, commences with: Do not let it happen. In enlisting soldiers, for instance, it is much better to reject those who are liable to have sunstroke, men with weak hearts, anemia, or any chronic trouble, and alcoholics; in short, all those who have inherited or acquired a tendency to morbid conditions. When sunstroke occurs, after removing the patient to the shade and loosening his upper clothing, the action of the heart must be stimulated and kept up with energetic friction and slapping, and the inhalation of a few whiffs of ether or acetic acid, water applied to the head, etc., and as he recovers, some stimulant given him to drink. If the patient is exhausted from overwork, debility or malarial conditions, an intravenous injection of quinin should be made, or at least a hypodermic injection (4 grams each of hydrochlorate of quinin and antipyrin, in 6 grams of acq. dist. heated together. If the solution crystallizes in the bottle it can be dissolved by slightly heating it again). He recommends that this solution should be kept on hand at times when it is liable to be needed. Certainty as to malarial condition is only acquired by examining the blood, but as this would be impossible, and as quinin is comparatively innocuous, it is best to treat in this way all doubtful cases. In severer cases with asphyxia, traumatic shock or intoxication from infection, it is of the utmost importance to excite the cardiac contractions, and the loss of a minute may cost a life. Rotter advises an energetic revulsion on the cardiac region with a moxa, Mayor's hammer or blazing sealing wax, cauterizing or scarifying a large extent of surface and scattering salt upon it. Direct excitation of the cardiac contractions with the electric current has been found effectual, but an electric appliance of sufficient power to send a current through the chest is not always at hand. The best and most practical means to accomplish it is artificial respiration. This can be Sylvester's method of raising the arms, or Pancini's raising the shoulders, or Laborde's rhythmic traction of the tongue, any way to introduce oxygen into the lungs and drive the blood into the heart. There is no stimulant for the membranes of the heart that compares with the oxygen of the air, and Desanti has seen persons revive after they have given no indications of life for several hours. As a supplement to the above treatment, he mentions the hypodermic injection of sulphuric ether, which has a powerful effect in stimulating cardiac action. The surgeons of the German army are required to carry a Pravaz syringe on the march with a bottle of ether for this purpose, which practice, he adds, should be introduced into every army.

NECROLOGY.

SIR JOHN ERIC ERICHSEN, one of the foremost representatives of British surgery, died September 23. The distinguished surgeon was born in 1818, of noble Danish descent. He was surgeon-extraordinary to the Queen, ex-president of the Royal College of Surgeons of England, and president of University College of London. His contributions to scientific medical literature were extensive and important, especially the well known "Science and Art of Surgery." His "Concussion of the Spine" and the monograph "Railway Injuries of the Nervous System" showed his energy in another surgical division.

N. RUEDINGER, M.D., of Munich, "the last of the old school of anatomists." His works on anatomy, descriptive, topographic and systematic, form an important part of the foundation of our present knowledge. His folio atlases are in nearly every library, and the list of his contributions to science includes works on anthropology, embryology, histology of the organs of hearing, etc. It is to him we owe the use of carbolic injections for cadavers. He was one of the founders of the *Monatsschrift f. Ohrenheilkunde*, and of a special magazine devoted to the anthropology and early history of Bavaria.

G. LAGNEAU, M.D., Paris, noted for his profound anthropologic and hygienic studies which resulted in many practical measures of the highest benefit to his countrymen and to humanity. He was member of the Académie de Médecine for twenty years.

JULES ROCHARD, M.D., Paris, aged 76, retired Inspector General of the Service de Santé de la Marine, President of the Académie de Médecine in 1894, of the French Association for the Advancement of the Sciences, and of various other scientific societies, a brilliant and classic writer and orator, "whose entire life was an honor and an example to the medical profession." His numerous works on hygiene, education, epidemics, etc., were rounded off by his vast work recently completed, the Encyclopedia of Hygiene. Among his contributions to the *Revue des Deux Mondes* were articles on "Marine Hospitals," "The Rôle of Alcoholism in Modern Society," "Hygienic Education and Mental Overwork," etc. He was one of the few who seem to have everything to complete their happiness, international honors, devoted friends and family, and perfect health until 1883, when he was shot by an insane person. He apparently recovered from the wound, but the bullet remained in his breast, and recently produced the troubles which led to his death. He commenced his career as a third-class surgeon in the navy, and retained his love of the sea as a true Breton to the last. His son Eugène is editor-in-chief of the *Union Médicale*.

CHARLES MILNE, M.D. (University of the City of New York, Medical Department, 1873), at New York city, September 28, aged 56. He was a member of the Medico-Legal Society of New York.——Henry Hooper Mitchell, M.D. (Department of Medicine of the University of Pennsylvania, Philadelphia, 1842), at Elkton, Md., September 27, aged 76 years.——William C. Caldwell, M.D. (University of Wooster, Medical Department, Cleveland, Ohio, 1869), at Fremont, Ohio, of cancer of the stomach, September 29, aged 59 years. He was a member of the Ohio State Medical Society and a contributor to various medical journals.

MISCELLANY.

City Physician of Bath, Maine.—Eben J. Marston, M.D., has been appointed to this position, *vice* W. H. Tukey, M.D., resigned.

The Detroit Academy and Medical Association upon their first meeting, Monday, September 7, had pathologic specimens which were furnished by Drs. H. O. Walker, Carstens and Longyear.

To Drill Holes in Glass.—The *Bulletin d'Apiculture*, No. 119, states that holes can be easily drilled in glass with an ordinary trocar or drill, if the spot is first moistened with a drop of the following mixture: Dissolve 25 parts oxalic acid in 12 parts of essence of turpentine, and add a chopped clove of garlic. Set it aside for a week, stirring occasionally. Pour it into a bottle and keep tightly corked.

Training School for Insane Asylum Nurses.—In response to demands of outside physicians a training school for nurses and attendants of the Cook County (Ill.) asylum for the insane has been organized and a competent faculty, principally of medical men connected with the asylum, selected. The course of studies includes physiology, hygiene, therapeutics, massage and allied subjects.

The Pathological Society of Rochester, N. Y., has petitioned the city council for an ordinance to allow the Mayor authority to grant permits for physicians to ride on the sidewalks with their wheel between 10 o'clock P.M. and 6 o'clock A.M. The Rochester *Herald* has a strong editorial recommending the council to pass the ordinance requested.

Illness of Dr. Hamilton.—The editor of the JOURNAL has been confined to his room, most of the time to his bed, with an attack of acute bronchitis since September 25. He was present at the Macewen dinner in compliment to that distinguished surgeon and the host, Professor Senn, but was ill then and scarcely able to speak; since that time he has not been out of his room. His friends hope that he may be out in a few days. He was relieved from the Marine Hospital last week.

Retires From the Armenian Field.—Dr. Grace M. Kimball, who is appointed assistant physician for Vassar, obtained a reputation for her bravery and work in Van in behalf of the Armenians. Few laborers in that difficult field have remained so long and continuously without an interval of rest. Worn out by the prolonged anxiety and the arduous duties of her medical and missionary work, Dr. Kimball has decided to retire from the Armenian field, and after visiting the hospitals and schools in Europe, she will begin her college work in January.

Cause of Electric Death.—Experiments have been made by A. M. Bleile upon dogs in order to determine the cause of death in electric shock. The conclusion reached is that for a given animal in a normal condition as to health a definite amount of electric energy will produce fatal results. It is thought that the action of the electric discharge is to contract the arteries and increase the pressure of the blood, and that death is due to inability on the part of the heart to sustain the increased pressure of the blood so produced. Postmortem examinations seem to show that the passage of the current does not cause any anatomic disintegration.—*Popular Science*, September.

Entertainment to Professor Macewen.—Prof. Nicholas Senn, president of the AMERICAN MEDICAL ASSOCIATION, gave a dinner at the Chicago Athletic Club, September 28, in honor of Prof. William Macewen, of Glasgow, Scotland. There were present: Drs. W. T. Belfield, John E. Owens, Truman W. Miller, Edmund Andrews, Christian Fenger, A. H. Ferguson, Captain Pilcher, U. S. A., Major Hartsuff, U. S. A., J. H, Etheridge, E. J. Doering, D. A. K. Steele, Dr. Cole, of Montana, E. J. Senn, G. Wm. Reynolds, John B. Hamilton, Jas. A. Lydston. Speeches were made by most, if not all, of those present, eulogizing the honored guest, from which it can be inferred that the entertainment lasted into the "wee short hours ayant the twal," and was of a character well calculated to delight the genial Bobby Burns himself, had he been present at the affair. The editor of this JOURNAL regretted that illness compelled his early withdrawal.

A Sleep-producing Exercise Preferable to Hypnotics.—Dr. J. B Learned, Florence, Mass., writes to the *Boston Medical and Surgical Journal* that he has experienced "infinite advantage" from moderate and varied muscular exercise as a means of inviting sleep. On retiring put in use, by contraction, a certain group of muscles; change to another before exhaustion to another and thence to another, having a definite routine, and continue until a sense of fatigue has come. The brain meantime is asked to keep a record of the respirations and of the muscular engagements in their order until it, too, says "Enough!" A few minutes generally suffices. Will sufferers be willing to use any methods or agents foreign to the materia medica? Sleep immediately on retiring is restorative. The drug does not make it so, continuously used. Wine, tobacco, tea, coffee and late suppers, with social and emotional excitement often delay the hour of sleep. My own personal needs were at the foundation of this "discourse." Conditions of the heart, digestion and nervous system should not be ignored in any case of insomnia. The sufferers are abundant everywhere now.

University College of Medicine, Richmond, Va.—At a meeting of the faculty of this college Dr. F. S. Harker, who has so efficiently filled the position of adjunct to the professor of histology, pathology, bacteriology and urinology, was unanimously elected to fill the chair made vacant by the recent death of Dr. Charles H. Chalkley. Beside the special training which Dr. Harker has received which fits him for the new chair, he has shown himself gifted as a teacher.—*Va. Med. Semi-Mo.*, September.

Phosphorus Necrosis.—Mr. Edwin Gould, who owns a large match factory at Passaic, N. J., has recently promulgated an order that all employes who do not present, within a specified time, a dentist's certificate that their teeth are in a condition of perfect repair shall be discharged. The danger of necrosis of the jaw from the phosphorus used in the manufacture of matches is well known, and he is said to have been induced to take this step by the fact that not long since an employe of one of the Diamond Match factories in Ohio, who had been attacked with necrosis, sued the corporation for $10,000 damages.—*Boston Med. and Surg. Jour.*, September 24.

Anent Germs.—Dr. K. N. Bahadhurji of Bombay, in the *Indian Lancet*, July 1, 1896, concludes an exceedingly interesting critique upon "The Germ Fad," as so styled by himself, in the following presentation: "Bacteriologic therapeutics is but a system of modern alchemy, and rests and proceeds on incorrect assumptions and daring guesses as conveniently abandoned as confidently set up. . . . . Fortunately the germ scare is cooling down and germs will soon cease to be the objects of such anxious care and study, and will in time be consigned, in all probability, to the limbo of exploded myths which have had their day." The article is a long one and might advantageously be condensed for the pages of the JOURNAL, but what has been already quoted sufficiently displays its decided skepticism regarding the rôle of the bacillus, the wherefore of its being, the significance of its appearance, the explanation of its functions and the embarrassing schemes for its annihilation. For the present, at least, we must conclude that there is no uncommon law in the governmental system of the microörganism, and may we not add no unique personalities, with extraordinary powers. As has been said, we may multiply corroborations but add only a moiety to our real knowledge.

Calcified Fibroid from Cremated Corpse.—Dr. Yamagiwa of Tokio, in *Virchow's Archiv*, Vol. cxliv, part 1, 1896, describes a specimen of calcified fibroid found after cremation in the ashes of a woman in whom myoma of tne uterus had been diagnosed during life. She uied of paraplegia at the age of 70. When 28 she noticed for the first time a tumor in the hypogastrium; next year she married but never bore a child. The tumor grew slowly till she was 38; then it ceased to increase and became very hard. At 45 the patient lost her husband. When 50 she complained that the growth had become very heavy. In 1882 a doctor examined her, and noted that the tumor was of stony hardness and freely movable. Paralytic symptoms appeared and lasted for about three years; they reappeared seven months before death. Debility and emaciation then followed. Yamagiwa does not distinctly make out that the paraplegia was due to pressure of the tumor on nerves. The fibroid removed from the ashes looked like a petrified human brain. It weighed six pounds and ten ounces and measured from before backward nearly eight inches, transversely over five and one-half inches, and vertically a little less than five and one-half inches. On histologic examination uterine fibers were discovered. The mass was due to pure calcification and there was no ossification.

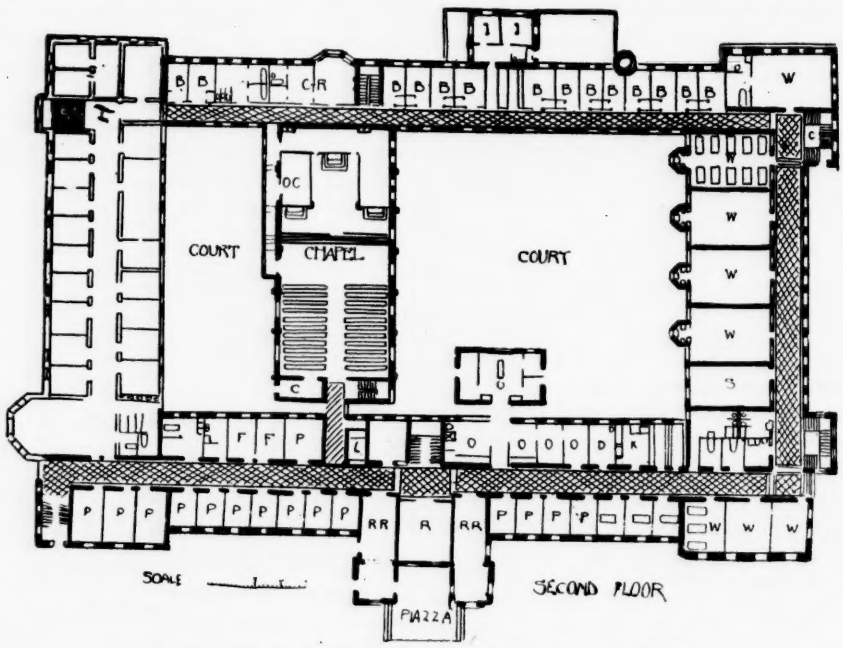
The Medicine Man of the Congo.—Among the Bakete, a tribe of the upper Congo river, the witch doctor rules supreme. The following is quoted from a recent lecture by a returned missionary: "The only attempt at religious rites is that practiced by the medicine man. In each town there are a certain number of medicine men, or witch doctors; but the medicine men of the town have no right to make medicine for their own town. Once in five years strong medicine is made. The doctors gather outside the town and hold a palaver as to the price to charge for making medicine, and after long haggling agree on a sum. They then enter the town and command that houses or open sheds be built for their accommodation and announce their intention of making medicine. The people are instructed that on the next day they must not leave their houses until noon, and the injunction is implicitly obeyed. Early in the morning the medicine men go into the woods and surrounding a tree that they know to be a medicine tree, speak to it thus: 'O tree, we want medicine from you. We want good strong medicine. After having partaken of this medicine anyone who shall steal commit murder, lie or do any wrong let him die.' The last word is repeated three times. The medicine men take the bark from the tree, grind it into powder and mixing with palm oil make it into balls the size of a chestnut. Returning to town they enter the huts prepared for them, summon the people and administer the medicine, repeating the words addressed to the tree regarding the penalty for wrong doing after having taken medicine. The natives thoroughly believe in the power of the medicine men."

Regulation of Practice of Veterinary Medicine in Virginia.—A law has been passed in Virginia, taking effect May 1, 1896, which permits only two classes of persons to practice veterinary medicine or surgery in that State: 1, all persons who were, prior to that date, practicing veterinary medicine or surgery in that State; provided that before Nov. 1, 1896, they shall apply in writing to the State board of veterinary examiners and furnish satisfactory proof that they have been in practice in the State prior to May 1, 1896; 2, all persons who shall hereafter receive certificates from such board, and shall in all other respects comply with the law. Any person shall be regarded as practicing medicine or surgery within the meaning of this act who shall profess publicly to be a veterinary surgeon and offer for practice as such, or who shall prescribe for sick domestic animals needing medical or surgical aid, and shall charge and receive therefor money or other compensation, directly or indirectly. But nothing in this act shall apply to residents of Virginia who confine their practice to the castration and spaying of live stock, nor shall it prevent any person from prescribing for live stock who does not claim to be a veterinarian or veterinary surgeon. The board of veterinary examiners mentioned is to consist of five members, learned in veterinary medicine and surgery, to be appointed by the governor, from a list of names recommended by the Virginia State Veterinary Medical Association. The board may prescribe rules, regulations and by-laws for its own proceedings and government, and for the examination by its members of candidates for the practice of veterinary medicine and surgery. In case any applicant shall fail to pass a satisfactory examination he shall not be permitted to stand any further examination within the next six months thereafter or until the next meeting of the board, nor shall he have again to pay the prescribed $5 fee; provided, however, no applicant shall be rejected upon his examination on account of his adherence to any particular school of medicine or system of practice, nor on account of his views as to the method of treatment and cure of disease; and provided, further, that when, in the opinion of the president of the board, any applicant has been prevented by good cause from appearing before the board, the president of the board shall appoint a committee of three members who shall examine such applicant, and who may, if they see fit, grant him a certificate. Any person who shall practice veterinary medicine or surgery in violation of this act, shall be fined not less than $50 nor more than $500 for each offense, and it shall not be lawful for him to recover by action, suit, motion or warrant any compensation for services which may be claimed to have been rendered by him as such practicioner of veterinary medicine or surgery.

The Life Insurance Examiner's Decalogue.—The medical Department of the Prudential Insurance Company of America has issued the following ten commandments to their examiners: 1. Carefully read the medical examiner's instruction book. 2. Examine promptly in a quiet place, preferably at the home of the applicant, and allow no one to be present during your examination. 3. Answer each question and each subdivision of a question. Be explicit in your answers. Avoid indefinite expressions, such as childbirth, shock, grief, accident, injury, change of life, don't know, etc. Use ink in writing. 4. Pay especial attention to the average quantity of spirits, wines and malt liquors used daily. Give an average of each. If there is a history of previous excess give full particulars. 5. Give a full description of any illness in the history of an applicant, number of attacks, when last, duration and severity. 6. Describe the duties of the applicant. Explain trade terms used to denote an occupation. State the line of business or work. Note if occupation is hazardous or injurious to health, and see that the true occupation is stated. 7. Give careful attention to the moral hazard of the risk. 8. Be sure the urine you examine was voided by the applicant. 9. Be sure you examine the right person, and that you get the exact age, date of birth and a full family history. 10. Personally examine and personally secure and witness the signature of the applicant.

Substantial Professional Advance in Therapeutics.—The editor of the *American Therapist*, September, refuses to admit the gloomy views of those who look upon therapeutics as a thing of the past. While it may be true that too many practitioners rely on the empiric use of ready-made pharmaceutics, and thus forget or never learn the rudiments of pharmacology and therapeutics, yet the proportion of scientifically and broadly educated physicians is increasing very rapidly in this country. The scientific study of therapeutics has never engaged more or better men than now. The proceedings of representative medical societies and current issues of legitimate and leading medical journals include a very satisfactory proportion of contributions on therapeutic subjects. These are the sources

from which this journal draws much of the practical and instructive matter presented monthly to its readers—besides inspiring and printing many original contributions. One of our exchanges recently printed a pleasantly satiric letter from a correspondent who informed the editor that in this period of specialism, and finding most specialties "done to death," he had decided to adopt the *specialty of general practice*. That is the peg on which our contemporary should hang his "pessimism." Therapeutics is neglected by the average aspirant for publicity because it seemingly affords no special prominence; it is too general. Any 'ology, properly wooed, brings reputation and distinction. The broadly educated general practitioner, without a specialty, is too commonplace for average ambition. But the study of therapeutics is nevertheless indispensable—even in all specialties. Progress in therapeutics is constant, and we may hope with undoubting optimism that the fashion to study and write on drugs and drug action will spread through all ranks.



GROUND PLAN OF THE ALEXIAN BROTHERS HOSPITAL.

When the first division reached the new building it marched on to St. Joshaphat's School, while the rest of the marchers broke ranks and joined the gathering crowds waiting for the laying of the stone. In anticipation of the ceremony a raised platform was built in front of the main entrance to the building. This platform was decorated with the national colors in flags and bunting. Over the platform was placed a canopy. In front of this waved the papal colors, surrounded by the national flag and those of a number of European nations. The platform was carpeted, and chairs were reserved for the invited guests behind the speakers' platform. At the west end of the platform was the stone, which was ready to take its permanent place in the structure after the ceremony. At 4 o'clock the platform was filled with guests and members of the Alexian Brotherhood, waiting for the arrival of the Archbishop and the procession. One of the earlier arrivals was Mayor Swift." We are indebted to the *Inter-Ocean* for the accompanying illustrations.

THE NEW HOSPITAL BUILDING.

The Alexian Brothers New Hospital in Chicago.—With imposing ceremonies the corner stone of the new hospital of the Alexian Brothers was laid Sunday, October 4. About 25,000 people were present to witness the laying of the stone by the most Reverend Archbishop Patrick Feehan. There was also a great parade by various Catholic societies, in which about 15,000 persons took part. The gay uniforms and ecclesiastic regalia gave an altogether old world appearance to the pageant. The *Inter-Ocean* says:

"Along the route the procession was greeted with much enthusiasm, most of the streets being lined with spectators. A number of houses were decorated with flags and bunting.

Antitoxin Collective Investigation (Second) American Pediatric Society.—*To the Profession:*—The American Pediatric Society are encouraged to ask the co-operation of the profession in a further collective investigation. Laryngeal diphtheria is believed to furnish a crucial test for antitoxin; the present aim is to ascertain, 1, what percentage of cases of laryngeal diphtheria recover without operation, under antitoxin treatment; 2, what percentage of operated cases recover. The Society asks for records of cases of *diphtheria involving the larynx, whether operated or not, occurring in private practice in the United States and Canada, treated with antitoxin.* It is expected that cases occurring this year will be treated with

reliable preparations of the serum, will be treated early, and will be given efficient doses. The second report is designed to be a study of cases occurring between the closing of the first report, May 1, 1896, and the closing of the present collective investigation, April 1, 1897. In order to secure data which shall make the tables complete, circulars containing blanks for ten cases have been printed and are now ready for distribution. It is desired that physicians shall fill out circulars (blanks) as cases occur, not trusting to memory, and shall urge their friends having similar cases to do the same. Circulars can be had by applying to the committee (address below). Several groups of cases in the first investigation arrived too late and were lost to the report. It is desired that circulars as soon as filled (ten cases) be returned to the committee. The collection of cases must close at the end of March, 1897. For extra circulars (blanks), for returning circulars (filled), and for further information, address the chairman of the committee: W. P. Northrup, M.D., 57 East 79th Street, New York, N. Y.

THE ACTION OF THE SOCIETY UPON THE (FIRST) REPORT.

1. Dosage: For a child over 2 years old, the dosage of antitoxin should be in all laryngeal cases with stenosis, and in all other severe cases, 1,500 to 2,000 units for the first injection, to be repeated in from eighteen to twenty-four hours if there is no improvement; a third dose after a similar interval if necessary. For severe cases in children under 2 years, and for mild cases over that age, the initial dose should be 1,000 units, to be repeated as above if necessary; a second dose is not usually required. The dosage should always be estimated in antitoxin units and not of the amount of serum. 2. Quality of antitoxin: The most concentrated strength of an absolutely reliable preparation. 3. Time of administration: Antitoxin should be administered as early as possible on a clinic diagnosis, not waiting for a bacteriologic culture. However late the first observation is made, an injection should be given unless the progress of the case is favorable and satisfactory.

Phosphorus-Workers in Relation to Life Insurance.—The *Medical Examiner* regards the manufacture of matches as an occupation that debars its workers from insurance examination.

Around about Frutligan, in the Bernese Oberland district of Switzerland, a large proportion of the inhabitants are idiotic, due to the phosphorus used in matches. In every house matches are manufactured, and in every house is a misshapen, grinning idiot. This condition of things is due to an accumulation of hereditary influence, as the parents and grandparents for generations have been engaged in this industry. The Swiss, as well as scientific and philanthropic people generally, deplore this state of things, and are endeavoring to devise means by which matches may be manufactured without sulphur or phosphorus. Chemists are endeavoring to discover some substance for this purpose.

The same thing occurs in France where matches are made. In France matches are manufactured by the goverment. The compensation is very small—something like one sou a hundred. Matches are made of imported wood. The government endeavored to substitute native wood, but the people objected, because with native wood they were not able to turn out as many matches, and consequently could not make as high wages, which amounted to about from two to two and a half francs a day. They wanted to be paid by the day instead of by the piece. As a compromise the old soft wood was allowed them on the condition that they should work by the piece.

Another source of discontent was the danger attending the manufacturing of matches. It is so detrimental to health that they wished government to grant those who do this work a pension, which was denied. While yet young—say at 25—the operator will lose his teeth, they frequently become paralyzed and idiotic, as before mentioned, and in nearly every instance there is experienced some form of ill health. We remember while a student at Bellevue that the late Prof. James R. Wood used to hold up before his class a specimen of the lower jaw which he had taken from a patient who had introduced phosphorus into it by picking a decayed tooth with matches. The consequence was a necrosed jaw. The Professor used this instance not only to illustrate the danger of the above practice, but to show that bone would grow again if the periosteum was preserved. In this case the jaw had been reproduced. So far as insurance is concerned, those who make matches or work in phosphorus are not acceptable risks. They should not be examined if their occupation is known to be of this character.

Pan-American Medical Congress.—(*Telegram to the Journal.*)—Cincinnati, Ohio, Oct. 6, 1896. *To the Editor:*—The official train for the Pan-American Congress, Mexico City, leaves Chicago and Cincinnati November 10, A.M., and St. Louis, P.M., same date, with sleeping and dining cars on special schedule for entire trip. H. L. E. JOHNSON, M.D.

Detroit.

At the meeting of the Detroit Academy of Medicine, September 22, Dr. David Inglis presented a report of "Three Postmortems."

The first case was a man 64 years of age, who had a history of previous injury. Four days before the doctor saw him he had severe headache, but no vomiting. There was some incoordination in using the legs and he found it difficult to climb stairs. He yawned frequently. These symptoms were progressive at the time he presented himself. He had consulted a specialist who reported no affection of his ears, although there was a history of an attack of inflammation of the middle ear, ending in suppuration and accompanied by much tenderness over the mastoid cells.

The doctor's diagnosis was impending apoplexy, but opposed to this was the fact, that there was no arcus senilis, arterial rigidity, or increased arterial tension. The pulse was soft, 72. Motor symptoms were bilateral.

Transverse myelitis was then suggested, in favor of which was the limitation of the motor defect to the lower extremities. Systemic sepsis was excluded, there being no albumin found in the urine. There was no evidence of poison from gout or malaria. The old abscess of the middle ear was considered. The motor defect in the legs increased, the headaches gave place to mental dullness and stupor, which ended in coma.

The postmortem revealed no lesion of the brain substance. The right half was compressed so that there was a space of half an inch between it and the skull which was filled with fluid. The ventricles were empty, and there had been a large amount of subdural sero-sanguineous effusion.

Dr. Inglis said: "The postmortem is instructive in the following particulars: First, it establishes clearly that congestion of the brain is a reality. Authors, of late, have been inclined to ridicule the belief in congestion of the brain. 'Gray,' in particular, discredits and resorts to the unscientific method of showing that no single one of the symptoms of cerebral congestions is pathognomonic, and that the prominent symptoms are frequently met with, individually, in various conditions."

The diagnosis of impending apoplexy was correct and based on the signs of severe cerebral congestion. The case was first a serous effusion, not a hemorrhage; as first there was compression of the brain, and second, the blood formed a soft and thin layer everywhere over the cortex, and not a clot as found from a spreading hemorrhage, nor was it over both halves of the cerebrum.

The doctor brought out the fact that a diffused lesion sometimes causes very limited local manifestations. In this case although the entire cortex was involved, sensation was perfect and the motor defect was confined to the lower extremity. Had the case been minus stupor and headache, the diagnosis would have been some lesion low down in the spinal cord. In uremic poisoning the same principle applies, the poison pervading all parts of the brain, yet a part only may be selected for its paralyzing effect.

Another point in the case is that the coma disappeared and the patient regained consciousness just before death, which

shows that unconsciousness does not always depend upon limited pressure, but upon increasing pressure, and with decreasing pressure consciousness may return while the pathologic conditions remain.

The doctor called his next postmortem a riddle. A boy aged 14, with a history of traumatism of head and back, developed choreic movements, which were bilateral. He was dull, abstracted and answered questions slowly. The choreic movements were such that it was impossible to listen to the heart sounds properly, heart's action was rapid and tumultuous, speech quite unintelligible.

Six weeks after he was brought to Harper Hospital, where he was again examined. He recognized Dr. Inglis, but could not speak. His left arm was powerless, but could use the fingers slightly, and raised the forearm like a flail. The right arm trembled on voluntary motion. Appetite ravenous. Paralysis of left arm occurred some days before death. Drs. Emerson and Hitchcock thought the case was one of multiple sclerosis. Dr. Inglis a cerebellar tumor.

A postmortem showed no nodules of any kind, but a large quantity of serum in the brain. The liver was the seat of innumerable uniform, thickly disseminated nodules of some neoplasm. The mesentery contained small nodules, but the glands of this organ were normal.

This case was presented to illustrate the fact that it is sometimes as well to confess ignorance as to know many things that are not so. The heart was normal and an operation over an arm center would have shown sound brain tissue.

The third case was a man aged 25. While blowing water from a hose he felt a sharp pain in the back of his head. This occurred in October, 1895. About the end of that year patient complained of pains over occiput, down the neck and across the shoulders. No history of head injury. The attending physician diagnosed rheumatism and treated him for a couple of weeks. Then eye trouble manifested itself, and he was sent to Dr. L. E. Maire, who diagnosed optic neuritis. There gradually developed furious paroxysms of head pains, with vomiting, and sometimes bilateral convulsions and absolute loss of sight.

When Dr. Ingils first saw him, the pains were of such a nature that the patient would cry out. Patellar reflex was entirely lost, ataxia marked, and when attempting to walk he tangled his feet and fell or leaned to his right. Was slow in responding to questions, answering in a loud voice. Was fretful and ate inordinately. Diagnosis, cerebellar tumor, and in consultation an exploratory operation was advised. He was trephined over the right lobe of the cerebellum, but no tumor could be found. The postmortem in the temporal region revealed minute elevations of thin plates of bone covering points where it was almost perforated. Twenty or thirty of these were found and were not confined merely to the region of the pacchionian bodies, though most numerous at the median line of the temporal bone. The dura mater was found altered in structure and the pacchionian bodies enlarged. The skull was found thinned at many places, especially at the parietal eminences, where, over an area as large as a silver dollar, on each side, the bone was as thin as card paper and could be easily broken with the fingers.

Upon removing the brain a pint or more of sero-sanguineous fluid escaped, which evidently came from the ventricles. Upon incising into the brain substance, the trouble was found to be located in the cerebellum, both lobes degenerate, the left slightly more than the right. It could only be called a degeneration, the substance being broken down into a semi-fluid, resembling pus, though having no purulent odor. The tentorium cerebelli was absorbed at the immediate site, and adjacent portions of the cerebrum seemed slightly affected. There were found in parts of the ventricles, small adherent masses which appeared like granulation tissue.

The diagnosis was confirmed to the extent that there was a cerebellar lesion, but not tumor of both halves.

In closing his paper Dr. Inglis said the postmortem was instructive in showing the remarkable thinness of the skull. Had the patient received a blow upon the parietal eminence, it might easily have broken in the thin plate of bone. Dr. Inglis also said that the medico-legal aspect of such a condition deserved notice.

Dr. J. Flintermann read a paper entitled "Senile Dementia." The Superintendents of the Poor for Wayne County (Detroit) have difficulty in finding room for the poor of the county in their new "county house," and for the insane at the asylum. In the county house there are 807 inmates and in the county asylum 368. Dr. E. O. Bennett, since being installed medical superintendent, May, 1881, has wrought many improvements. The asylum farm of 160 acres is taken care of almost entirely by the insane.

The buildings include the "county house," asylum hospital with chaplain's office attached, Wayne County Asylum, the new asylum erected in 1894, and double residence for the medical superintendent and book-keeper, the gas-lighting and heating plant, electric-light plant and outbuildings.

For the last three years no acute febrile diseases have occurred in the asylum or county house, with exception of three cases of typhoid that developed in the latter.

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Sept. 26 to Oct. 2, 1896.

Captain Norton Strong, Assistant Surgeon, relieved from duty at Fort Sheridan, Illinois, and ordered to Chicago, Ill., for duty, as attending surgeon and examiner of recruits in that city. First Lieutenant John S. Kulp, Assistant Surgeon, is relieved from duty at Fort Walla Walla, Washington, and ordered to Vancouver Barracks, Washington. Captain William Stephenson, Assistant Surgeon, is relieved from duty at Vancouver Barracks, Wash., and ordered to Fort Sheridan, Ill.

First Lieutenant Powell C. Fauntleroy, Assistant Surgeon, is relieved from duty at Fort Grant, Arizona, and ordered to Fort Niobrara, Nebraska, for duty. Captain George McCreery, Assistant Surgeon, is relived from duty at Fort Niobrara, Nebraska, and ordered to Boston, Mass., for duty as attending surgeon and examiner of recruits.

Captain William B. Davis, Assistant Surgeon, granted leave of absence for twenty-five days.

Change of Address.

Bennett, Alice, from Norristown, Pa., to Wrentham, Mass.
Grote, H. W., from New Orleans, La., to Room 20, Oakland Music Hall, Chicago, Ill.
Harding, George W., from Twelve Mile to North Manchester, Ind.
Krousgrill, D., from Wadesville to 605 S. 4th St., Terre Haute, Ind.
Kilbride, M. Frank, from Spring Lake Beach, N. J., to 2212 Green St., Philadelphia, Pa.
Lebensohn, M. H., from 63d and Morgan Sts., to 692 Sangamon St., Chicago, Ill.
Motter, Murray Galt, from Head of 30th St., N. W., to 1017 14th St., N. W., Washington, D. C.
Russell, E. S., from Tuscarawas, Ohio, to Room 424, Bissell Block, Pittsburg, Pa.
Sutton, E. M., from Masonic Temple to 328-329 Woolner Building, Peoria, Ill.
Von Koerber, Paul E., from Loup City, Neb., to Casa de Correos, City of Mexico, Mexico.
Wright, John, from Clinton, Ill., to 297 Reed St., San Jose, Cal.

LETTERS RECEIVED.

Bernd, Henry & Co., St. Louis, Mo.; Bell, Clark, New York, N. Y.; Bache, Emmet, New York, N. Y.; Brophy, Truman W., Chicago, Ill.; Bates-Whitman Co., The, New York, N. Y.; Bartholow, P., Philadelphia, Pa.; Bausch & Lomb Optical Co., Rochester, N. Y.; Boardman, E. O., Overton, Neb.
Charteon, M. R., Montreal, Can.; Chadwick Co., The, Chadwicks, N. Y.; Cutler, H. G., Chicago, Ill.; Caldwell, W. S., Freeport, Ill.
Dibrell, Jr., J. A., Little Rock, Ark.; Douglas, Richard, Nashville, Tenn.; Dower, T. J., Livermore, Iowa.
Fisher, John, Chicago, Ill.; Ferguson & Goodnow, Chicago, Ill.; Foote, A. E., Philadelphia, Pa.; Ferguson, E. D., Troy, N. Y.
Gibbs, M. D., Hartford, Mo.; Hummel, A. L., Advertising Agency (2) New York, N. Y.; Haldenstein, J., New York, N. Y.; Hoadley, A. E., Chicago, Ill.; Hall, Jr., J. Underwood, San Jose, Cal.; Halleck, W. E., Washington, D. C.; Hall, Cromwell, Cromwell, Conn.; Hagler, E. E., Springfield, Ill.; Hammond, Wm. A., Washington, D. C.; Higgins, F. W., Cortland, N. Y.
Johnson, F. M., Boston, Mass.; Jelks, Jas. T., Hot Springs, Ark.
Kellogg, E. B., Boston, Mass.; Kellogg, W. H., Palo Alto, Cal.; Kress & Owen Co., New York, N. Y.
Lee, Frederick D., Milwaukee, Wis.; Learned, J. B., Florence, Mass.; Little, C. H., Saginaw, Mich.; Luckey, J. E., Chicago, Ill.; Londonderry Lithia Spring Water Co., Nashua, N. H.; Lea Bros. & Co., Philadelphia, Pa.
Merrick, M. B. (2) Passaic, N. J.; Manley, Thos. H., New York, N. Y.; Mills, H. R., Port Huron, Mich.
O'Toole, T. J., Eagle Grove, Iowa.
Pope Mfg. Co., Hartford, Conn.; Pressey, A. J., Grand Rapids, Mich.; Penton, A. B., Mackinaw City, Neb.; Parke, Davis & Co., Detroit, Mich.
Rumbald, F. M., St. Louis, Mo.; Reynolds, Arthur R., Chicago, Ill.
Stirling, A. W., Atlanta, Ga.; Sternberg, Geo. M., Washington, D. C.
Warfield, Clarence, Galveston, Tex.